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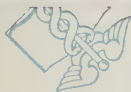
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HABITUAL CONSTIPATION

HABITUAL CONSTIPATION

ITS CAUSES, CONSEQUENCES, PREVEN-
TION, AND RATIONAL TREATMENT

Set Forth in Non-Technical Language

BY

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*“Nulla digestio
nulla felicitas”*

TO HIS TWO FRIENDS
THROUGH JOYS AND SORROWS
DR. LOUIS FISCHER
AND
DR. MAX EINHORN
THIS BOOK IS DEDICATED
AS AN EXPRESSION OF HEARTFELT GRATITUDE
BY THE AUTHOR

PREFACE

HABITUAL constipation is a disease of civilization, and affects all classes and all ages. Altho not a fatal nor even a dangerous disease, it may drag on for many years, often for an entire lifetime, embittering existence, destroying happiness, and, in exceptional cases, making life intolerable.

The treatment of constipation belongs to the province of the physician; but it presupposes an understanding of the nature, the causes, the consequences, and the complications of the disease. And further, since prevention and a rational treatment can not be carried out successfully without the cooperation of the patient, he must have such knowledge as to supplement the physician's advice and render it intelligible.

The present book is written from this

P R E F A C E

point of view. It is intended in no way to supplant the physician, but to second his efforts toward effecting a cure of this wide-spread evil through judicious counsel. I believe that this can best be accomplished by explaining the nature of the disease and its consequences to the patient so that he will follow the physician's directions with docility and good will.

One who expects to find miracle-working remedies in this book will lay it aside disappointed, but he who reads with attention, who regards the work as a supplement to and an interpretation of the physician's directions, will, I hope, find it of service.

Should I succeed in persuading the reader that chronic constipation is a disease that need not exist if it be combated with sufficient energy and understanding, the book will not have been written in vain.

ISMAR BOAS.

Berlin N. W.

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PART I

NATURE, CAUSES, AND
CONSEQUENCES OF CONSTIPATION

HABITUAL CONSTIPATION

CHAPTER I

ESSENTIAL NATURE AND CAUSES OF HABITUAL CONSTIPATION

OFFHAND, habitual constipation would seem to be easily determined by a comparison with normal intestinal activity. For example, if an intestinal movement occurs under normal conditions every 24 hours, then any excess of this period would appear to coincide with our understanding of habitual constipation. This is by no means the case, however, for a temporary lengthening of the period mentioned does not necessarily signify a diseased condition. We know, for example, that even such slight changes in our habits as railway or steamship journeys, changes of

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climate, psychic disturbances, fevers, changes in diet, a sedentary mode of life, or irregularity in meal-times, may easily cause a delay in the bowel movement without giving rise to what we, in the precise sense of the word, could call constipation, for with the removal of any of the causes above mentioned the normal course of intestinal activity returns.

It follows that a temporary postponement of normal intestinal evacuations can by no means be a criterion for a diagnosis of constipation. In further support of this assertion, it is the experience of many physicians that, in exceptional instances, a man may have a movement of the bowels only once a week, or even once a fortnight, without feeling or appearing to be ill. Indeed there are cases on record in which this period has been exceeded with no injurious consequences to the individual whatever. Such instances, however, are extremely rare.

In general, we may say that habitual delay in intestinal evacuation for a period of 36 to 48 hours can not be regarded as

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normal. But a diseased condition is unquestionably denoted when delayed evacuation is accompanied with the discharge of an insufficient amount of excrement.

As a rule, when stagnation of the intestinal contents is combined with insufficient evacuation, other local and general troubles begin to appear. Then we have present a fully developed condition of constipation. The opinion of the patient, however, as to normal or insufficient evacuation is not always reliable. I have often observed that many people have no idea what constitutes an adequate or proper bulk of their stools and the physician must cross-examine rigidly to reduce their exaggerated claims to a more modest estimate.

Habitual constipation occurs in and chiefly affects the large intestine. In this section, as distinguished from the small intestine, the rhythmic muscular contractions, or peristalsis, are very sluggish. These peristaltic movements, by means of which the material intended for evacuation is steadily pushed along toward the

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rectum, are mainly involuntary, hence under the influence of the so-called autonomic nervous system. This system consists of two different sorts of nerve bundles—the so-called sympathetic or inhibitory and the antagonistic parasympathetic or stimulating. Under normal conditions the nervous impulses streaming to the intestinal canal are in equilibrium; but if, for example, the inhibitory impulses overpower the stimulating, the result is a more or less marked retardation of peristalsis, and *vice versa*. At all events it must be noted that local nervous influences play a preponderating rôle in the production of habitual constipation in the lower end of the bowel. Let me say at once, however, that not all nor even most cases of habitual constipation are of nervous origin, but merely that the play and counter-play of the above-mentioned nerves affect peristalsis in a very marked way, tho the details are not yet sufficiently understood.

The essential nature of habitual constipation calls for still further definition.

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By the term, disturbance of intestinal peristalsis, we commonly mean those conditions in which the intestinal canal is not mechanically obstructed. When, for instance, adhesions exist in any part of the large intestine that hinder its peristaltic movements, then constipation inevitably follows; but this is then not a primary but a secondary trouble. Further, a displacement of the intestinal tube, with resulting constipation, may be caused by a tumor of the mucous membrane of the canal, but here again constipation is not a primary condition, but a sequel. The number of such instances, occurring in every physician's experience, might be indefinitely extended.

An exhaustive enumeration of the causes of constipation is impossible; and in the following pages we will discuss only those of most frequent occurrence. In the first place, there is no doubt whatever that habitual constipation may be of hereditary and familial origin. We see, for example, that in certain families constipation habitually declares itself in

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childhood, and a careful questioning of the members of the families reveals the fact that one or both of the parents were likewise constipated. We also meet with instances in which the members of an entire family suffer from constipation where no hereditary influences can be traced; but whether we have to do here with a congenital disturbance of function or with a common disorder of nutrition, to a consideration of which we shall come presently, can be determined only by a painstaking search for any verifiable facts bearing upon the case.

There is no doubt that an unsuitable diet followed for years plays a most important rôle as a cause of constipation. This form, which I named "alimentary constipation" some years ago, often has its foundation laid in the nursery. The desire to give children the most strengthening food results in an exclusive diet of the so-called easily digested foods, such as milk, eggs, butter, white bread, meat and fish, sweet and fatty farinaceous foods, and chocolate and other sweets.

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In spite of this over-rich nourishment the children do not thrive; they tire easily, are backward in school, and have cold hands and feet. Tho there may be a progressive increase in weight, the bowel activity leaves much to be desired. Such children are doomed to a life of misery if the parents are foolishly inclined to do the doctoring with regularly repeated doses of laxatives, or if, with the idea that unaided nature will do all that is necessary, they let things run along.

Habitual constipation is also frequently developed at puberty (the *constipation of puberty*). The young at this period of development, especially young girls of good family, often suffer from extreme modesty. None but the mother must even suspect that they ever visit the toilet. Whether in a boarding school, on a journey, at a dance, or on a visit, the call of nature is concealed and repressed. When such repression is frequent, the result is an irregular bowel activity that gradually becomes an increasing condition of habitual constipation. But the

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period of puberty offers other conditions favoring the development of this disease. At this period many girls endeavor to reduce or develop their figures, which they imagine need correction, by all kinds of secret and ineffective methods of treatment—methods suggested to them, perhaps, by older friends. If they feel they are growing too stout, these innocent young creatures seek to reduce, either by practising starvation, by taking purgatives or by taking some patent medicine, the principal ingredient of which may be a thyroid gland preparation. Altho the results are generally negative, in exceptional cases they are obtained at the cost of all sorts of bowel disturbances and perhaps also of heart troubles and loss of strength. The treatment is different with those girls who suffer from abnormal thinness, for here the attempt is made, and sometimes with success, to gain flesh by eating farinaceous food, chocolates, sweet cakes, and the like; but even so, the joy of gaining a slight and usually short-lived increase in flesh is more than out-

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weighed by the establishment of habitual constipation.

It is not only in childhood and youth that we meet with these dietary sins, however, for we encounter them in adults as well. In general, it is true, people of all classes and all nationalities instinctively crave the proper combination of alimentary substances which best maintains health and weight. This balanced mixture of food may be of the most varied character and yet the organism accommodates it perfectly. Trouble comes only when man, through occupation or struggle for existence, is forced to live under conditions widely departing from the normal. If we compare the life of a farmer, for example, who pursues his calling under unvarying conditions day in and day out, with that of the business man in the large city, who passes a great part of his life in travel, we can readily see that the former, even tho he does not always live according to the rules of hygiene, is generally healthy and free from digestive disturbances. But in the

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abnormal life of the city man such unvarying conditions are absent. If the latter would be free from digestive disturbances he must reverse his eating habits; in other words, he must, tho a city man, conform his habits to those of the farmer. How that may be done will be explained in the second part of this book. We will mention here, however, that such men may develop extreme cases of constipation without their being intestinally ill, as one may say, at the outset. If such a man is examined by the fluoroscope, or his intestinal tract is submitted to a functional test, it can be easily determined that the rapidity of passage through the intestine is hardly at all affected. It is only after he has been eating unsuitable food for a long period that we may find an actual disturbance of function or the presence of organic changes in the intestinal canal.

Still another cause of intestinal relaxation is found among the sequels of repeated pregnancies. While many women preserve their normal intestinal activity

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in spite of numerous confinements, nevertheless it is by no means uncommon to find a relaxed condition of the abdominal wall, due to a weakened abdominal musculature, whereby an adequate pressure on the abdominal contents is impossible. We may also find a sagging of the abdominal viscera under these circumstances, which will occasion disturbances of the bowel function, especially when there is a general weakness of the whole system in consequence of insufficient nourishment. A sedentary life or insufficient exercise is ordinarily considered as the chief cause of habitual constipation. But according to my experience this can be accepted only with many reservations. The merchant asserts that in his business he is running about all day long; the housekeeper is on her feet from dawn to dark; the riding master sits all day long in the saddle—and still these people often seek our advice for relief from constipation. Great activity of the muscles of the arms and legs alone, therefore, by no means prevents intestinal sluggishness.

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In fact, I have been able to demonstrate the exact opposite for many years; that is, that in the case of nervous, restless people several weeks of rest, even in bed, not only increases their strength and adds to their weight, but may also overcome an habitual constipation of many years' standing. It follows, therefore, that it is not movement as such that exerts a favorable influence on intestinal activity, but only such exercise as is wholly independent of work or occupation; in other words, exercise undertaken with this definite object in view. Such exercises include walking in the country away from the noise of the city, bicycling, hill climbing, or some rationally pursued sport, such as golf, tennis, or baseball.

Pronounced factors in the development and maintenance of chronic constipation are mental strains (so called "psychic constipation"). There is no doubt that sudden grief or fear may furnish a starting point for chronic constipation, but more frequently this condition is the result of persistent psychic depression

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—anxiety, fear, anger, worry over business matters, and what we describe to-day as neurasthenia or psychasthenia of all degrees up to nervous breakdown. Molière, in one of his greatest comedies, "*Le Malade Imaginaire*," written over two hundred years ago, before any one had arrived at a scientific conception of neurasthenia, depicted better than any physician could the plight of the wretched intestinal neurasthenic in the character of the tragico-comic Monsieur Pourgon. Such Monsieur Pourgons exist to-day in all corners of the earth—great trials to their associates, but constant benefactors to the druggist. While psychic excitement may exert a powerful influence on bowel activity—not only in a retarding but also in an accelerating sense (anxiety diarrhea)—it would be going too far to say that every subject of constipation was first a neurasthenic, or should be so treated. The reverse is often the case: the subject of chronic constipation who lives, as it were, daily with his bowel troubles and who sees no improve-

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ment in spite of many drugs and modes of treatment, falls gradually into a state of nervous unrest, becomes unduly concerned about his bowels, eats and sleeps badly, and in consequence gradually becomes a neurasthenic or hypochondriac. Among neurasthenics, on the other hand, habitual constipation may be nothing more than one of the many symptoms of which they are wont to complain; and even if the constipation is remedied, the neurasthenia is by no means cured but merely passes into another phase.

Again, certain poisons of occupational or therapeutic origin, which injuriously affect the musculature of the intestinal canal, may cause chronic constipation. Among the occupational poisons is lead. This material, so generally used by painters and printers, may give rise to painful intestinal contractions with habitual constipation as a sequel. Among the drugs which may similarly cause intestinal obstruction belong all the opium preparations, especially morphin. At one time, when opium enjoyed high professional

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favor in the treatment of appendicitis, I often observed that severe and obstinate constipation followed the administration of large doses of opium for several days. Of course nothing can be said against the administration of opiates for short periods, if it is borne in mind that some individuals are extremely susceptible to the action of opium and react to even a brief course of treatment with hardly reparable bowel disturbances.

The action of another drug, *nicotin*, is very peculiar. It is well known that tobacco in small amounts exerts a favorable and stimulating action on intestinal peristalsis. The assertion of many cigar and cigaret smokers that after the first morning smoke they must repair to the toilet, but that this reaction fails when (as with the Jews on the Sabbath) the morning smoke is omitted, has been repeatedly confirmed. On the other hand it is asserted by trustworthy physicians that the excessive use of *nicotin*, like that of morphin, arrests the intestinal movements. While I have never observed this,

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I would not deny its possibility, for we know of many drugs that exert a stimulating action when taken in small doses, but that have a paralyzing effect when taken in large doses.

So far I have sought to enumerate only the most frequent causes of habitual constipation. There are many more than these, and the important but difficult problem is to determine with certainty what cause is responsible for the disease in any individual case.

CHAPTER II

OCCURRENCE AT VARIOUS AGE PERIODS

HABITUAL constipation, as we have seen, may frequently rest upon an hereditary basis and may therefore be encountered in babies and very young children. When questioned regarding the duration of the disease, my patients have frequently replied, "As long as I can remember." Much more often than in infancy, however, do we find the existence of constipation in children of school age, even tho the nourishment is sufficient and rational from a hygienic standpoint. Oftentimes, the reason for this is a lack of order in the homes; the children are not awakened early enough, their breakfast is swallowed in haste, and there is no time for a regular and quiet visit to the toilet before they must rush off to school.

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If these bad habits are maintained, the normal rectal reflex is gradually blunted. Children, who have no concern over the evil results from the repression of this call of nature, will not of themselves attend to the latter with any regularity, possibly only every two or three days; and so the trouble becomes established before the parents are aware of it.

We have previously referred to the frequency of constipation at puberty and to the influence of repeated pregnancies on the establishment of an irregular bowel function, but still another condition needs consideration, namely, the frequency of constipation in the female sex in general. One would think that in women, whose mode of life and whose eating habits are much more regular than those of men, the intestinal activities would be much less frequently interfered with. But curiously enough the exact opposite is the case. Besides the above-mentioned causes, disorders of the reproductive organs, such as adhesions, tumors, displacements, and menstrual irregularities, play an impor-

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tant rôle. But independently of those, the mode of living of women, especially those of the laboring classes, is by no means so regulated and rational as one would imagine. When the husband does not come home at the proper meal time, the family meals become irregular. Or if the husband insists, either from habit or taste, on indulging in unsuitable food, the wife, in order to avoid extra cooking, must conform to his preferences. The husband here infects his wife, so to speak, with his constipation. Again, we often see in large families that the mother, through natural and certainly praiseworthy solicitude for the welfare of the children, considers her own alimentary needs last of all. And so, as we can readily understand, many mothers become subject in the course of years to all sorts of digestive disturbances, not the least among them being chronic constipation.

A large class of sufferers from chronic constipation is made up of those who are condemned to restaurant living. Such a life is the acme of the commonplace. One

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eats irregularly, and gulps down his food, often with his newspaper propped before him; the food consists largely of a number of fish and meat dishes of the most varied degrees of culinary preparation that give no impulse to well ordered intestinal peristalsis. Nothing is more baffling to the physician whose help is sought under these conditions.

Finally we come to the tendency toward constipation that old age is heir to, altho I do not agree with those who hold that advanced age *per se* is responsible for weakness of the bowel musculature. Such marked degrees of senile constipation as I have seen have occurred only in persons in whom the intestinal canal has functioned imperfectly for many years. That this condition should become worse with the increase of years and with the restriction of food intake and of exercise is not surprising. But I must emphasize the fact that I have seen men and women eighty and ninety years of age whose intestinal functions were perfectly preserved up to the time of drawing their

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last breath. Finally, the treatment of so-called senile constipation, when the trouble has first appeared at an advanced age, offers no unfavorable prognosis. In cases of the *sudden* appearance of constipation in the aged, however, one should not be contented, without a most careful medical examination, with the diagnosis of a harmless intestinal disturbance, for often enough a very serious and dangerous condition, namely, cancer, may be concealed under such an appearance.

CHAPTER III

VARIETIES AND FORMS

EVEN tho we restrict the term "constipation" to those cases in which the movements of the intestinal canal are not impeded by internal or external mechanical conditions, we may distinguish between several varieties of that disease. Altho the entire large intestine may occasionally participate in the development of chronic constipation, such cases occur seldom. From numerous X-ray examinations taken during recent years, we now know that constipation has three special hiding places: 1, the cecum; 2, the sigmoid flexure; 3, the rectum (see Figure 1). The fecal masses collect in these parts by preference, and pass through other segments of the intestines with normal rapidity.

The form of constipation occurring in

HABITUAL CONSTIPATION

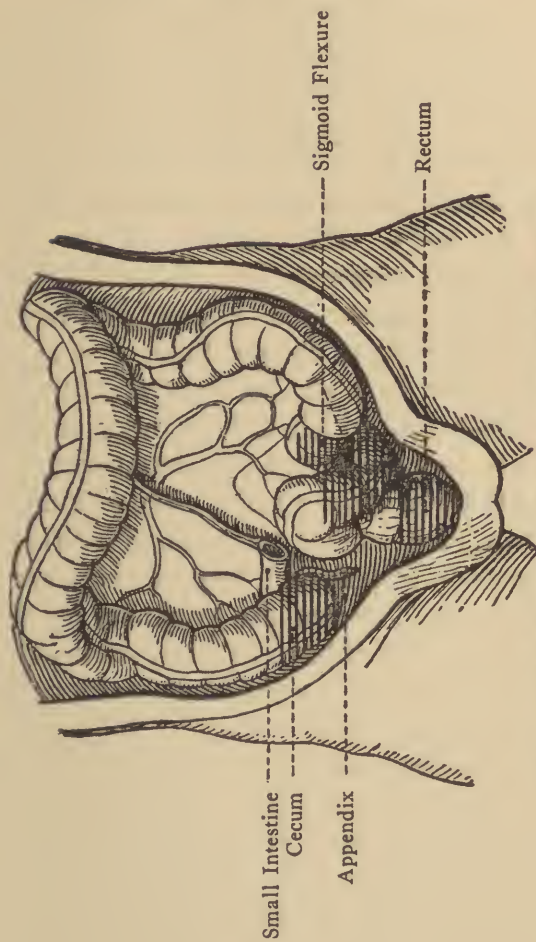


FIG. 1.—The Usual Seats of Stagnation in Constipation.

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the rectum needs special mention, for it is encountered particularly in persons who, as the result of repeated repression of the physiological stimulation of the rectal mucous membrane, have gradually exhausted the normal reflex of that part of the body. This leads to a state of rectal relaxation which the English physician Dr. Hertz has called *dyschezia*. The patients no longer have a normal inclination to stool, but in place of that an irritation which drives them to the toilet every few hours with unsatisfactory or wholly negative results. They have no normal, but what I have called a "fragmentary" defecation. The passages consist of small pieces the thickness of the little finger or of hard ball-like masses the size of a cherry or strawberry, aptly compared to sheep or goat stools. This insufficient defecation is often associated with a catarrh of the rectum. Then, instead of an evacuation of fecal matter, larger or smaller masses of mucus are discharged, or between the fragments of fecal matter there are collections of mucus of more or

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less fluid consistency. The final stage of this disease is what American physicians call fecal impaction, that is a collection of dry, hard, ball-like accumulations of feces. This condition, in my experience, occurs in acute form only in patients who have undergone a surgical operation, or have been confined to bed for long periods. But it may also be found in the subjects of chronic constipation who have treated themselves with all sorts of ineffectual measures.

We may also describe two special forms of constipation that are independent of the seat of the malady: one in which peristalsis fails, and the other in which there is a spasmodic contraction of the large intestine (so-called "spasmodic" or "spastic" constipation). In these latter cases we can feel one or more of the intestinal coils like hard contracted rolls in various parts of the abdomen, usually over the sigmoid flexure. In my opinion these contracted intestinal coils are not the cause but rather the result of the disease, the hard, dry masses acting as foreign

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bodies and causing reflex contractions of isolated segments of the bowels, just as we see in the case of incarcerated gall-stones. But whatever the actual condition may be, it is certain that well-marked cases of this form of constipation are to be distinguished from the first-mentioned variety, which we may call the atonic form, by the presence of more or less severe intestinal colic and marked flatulence, altho these symptoms may at times be absent. Between the ordinary and this last-mentioned variety there may be all sorts of mixed and transitional forms.

Finally, we come to the so-called paradoxical or masked forms of habitual constipation. Here the patient suffers more or less from marked attacks of diarrhea followed immediately by constipation. Or sometimes the diarrhea stands almost alone as the prominent symptom. The diagnosis of the real trouble may present great difficulties even to the most experienced physician under these circumstances, but we will merely say here that

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an X-ray examination affords an excellent and indeed indispensable means of determining the true character of the disturbance.

CHAPTER IV

RESULTS OF CONSTIPATION

Indirect Consequences

CHRONIC constipation in its fully developed form is apt to affect the general organism. This is not always the case, however, for there are many patients who suffer from constipation for years without making any complaint of their trouble. But as the disease progresses we frequently find some repercussion on the organism. Among the first of these reactions are a general physical depression, a disinclination to work, and an easy fatigability. We often find actual emaciation also, especially in patients who have the naïve conception that they can best treat their disease by starvation. Still more frequently do we have patients who complain of headache and dizziness.

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These head symptoms may declare themselves as a feeling of simple dull pressure and numbness or as severe migraine, which occurs infrequently at first, but then in gradually shorter and shorter intervals. While it would, of course, be an exaggeration to attribute every case of headache or migraine to intestinal disturbances, I have little doubt that cases of true migraine sometimes come under observation which are due to fecal retention alone and are completely curable by removal of this cause.

There is a common belief that bad breath is a frequent consequence or accompaniment of chronic constipation, but I do not regard this as correct. That a bad breath may occur with constipation can not be denied of course; but unfortunately it is not yet generally known how often bad breath (independently of that due to carious teeth or foul smelling tonsillar concretions) is to be attributed to a coated tongue. One should therefore not fall into the common error of attributing bad breath to constipation or digestive

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disturbances alone, but should recognize it as more probably due to a disorder of the oral cavity and treat it accordingly.

Unquestionably the organs of circulation, the heart and blood vessels, may become affected in sympathy with the disease. Cardiac troubles of this origin are not organic but functional and transitory, quickly subsiding with the cure of the bowel difficulty, even tho the latter has persisted for years. One form of this is what has been called "dyspeptic asthma." the attacks of which occur as a rule in the night. The patient awakes with a feeling of extreme oppression, struggles in vain for breath, walks restlessly up and down the room, opens the windows, has a pale and pinched look, and gives the impression of being in great suffering. Usually, before a physician is called, in response to various self-devised measures for relief the patient has an attack of explosive vomiting, and with this the asthma subsides.

Such heart attacks are the result of a large accumulation of gas in the stomach

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and intestines, pushing up the diaphragm and thereby interfering with the normal action of the heart. In time, the heart may become affected, or it may, as I have been able to demonstrate, remain free from any organic change. A diagnosis of the true condition of the heart at such times must be based upon a careful medical examination.

In addition to these serious and alarming attacks of asthma there may be an abnormally rapid or slow, irregular or intermitting pulse occurring as a result or an accompaniment of chronic constipation. Here again the most careful observation on the part of the physician is called for to determine what is cause, what is sequel, or what is complication.

The kidneys also may suffer under the influence of obstinate and long continued constipation. Usually, however, the urinary analysis shows but a small amount of albumin and few cylindrical cells. In general the disturbance is of no serious import and the symptoms quickly disappear after the bowel trouble is cured.

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A more evident sign of the harmful working of constipation on the general system is the occasional appearance of fever (so-called toxic fever). In childhood, as we know, an elevation of temperature occurs under much less provocation than in adults, but even in the latter slight temperature changes are by no means rare. That they are not observed more often is because we do not regularly take the temperature of patients with constipation. But in any case the temperature changes are slight and evanescent—the maximum being in children about 38.5°C . (101.3°F .) and in adults not over 38°C . (100.4°F .).

The foregoing sequels of chronic constipation are grouped under the now popular term *autointoxication*. The doctrine of autointoxication, established by the French scientist Bouchard, has given rise to many differences of opinion in scientific medicine which have not yet been settled. We can not enter into a discussion of this matter here, however, and it can only be said that there is little objec-

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tion to the term autointoxication so long as it is restricted to the action of poisons generated in the intestinal canal. If we go beyond this and ask what are the poisonous products elaborated in the intestine, we must acknowledge that despite the great industry of numerous investigators we still face an unsolved problem. In any case, however, the toxic susceptibility of the individual patient without doubt plays an important rôle in the production of these general symptoms.

Direct Consequences

Notwithstanding a constipation of many years' duration the large intestine may remain absolutely normal. But it may in the course of time become the seat of complications of a more or less severe nature. First among these we may mention catarrh of the large intestine. As a result of the long retention of inspissated and sometimes stony-hard fecal masses (coproliths) we find irritation of the intestinal mucous membrane, with the discharge of a variable quantity of mucus.

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This mucous discharge, unquestionably a product of disease, is not to be regarded, as it might at first sight appear, as harmful. Perhaps, on the contrary, the mucus may form a sort of protective wall against the mechanical irritation of the inspissated fecal masses. It is indeed striking how readily this catarrhal state subsides when, under appropriate treatment, the normal intestinal functions are restored. Perhaps also it is not the constipation as such that causes the catarrh, but rather the use of irritating purgatives or enemas. Most persons regard purgative remedies only from the point of view as to whether they act or not and never think of the injurious consequences of their long continued use.

The seat of the catarrh corresponds exactly with that of the constipation. Therefore we may distinguish catarrh of the cecum (typhlitis), of the sigmoid flexure (sigmoiditis), and of the rectum (proctitis). In the most advanced cases the catarrh may involve the entire large intestine. That these local catarrhs may

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give rise to severe pain, or at least to great discomfort, hardly calls for proof. The symptoms are especially pronounced in cases of cecal catarrh (typhlitis). There is no doubt in my mind that chronic constipation may cause not only irritation but even a tumor growth in this especially predisposed bowel segment. This opinion was formerly strongly opposed, but to-day, when most people have had the appendix removed, it would do violence to the fact to deny the possibility of an acute inflammation of the cecum. We often see patients who, after the removal of the appendix, have a brief period of health, but soon begin to complain anew of pressure and pain in the right iliac fossa, undoubtedly due to fecal stagnation and catarrh in this portion of the intestine. Such a diagnosis appears simple after the removal of the appendix, but is easily mistaken for appendicitis before that operation. In cases of doubt the removal of the appendix is the most rational plan, as we shall discuss later. But we can not positively assert that com-

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plete freedom from all intestinal trouble may be expected with the removal of the appendix.

Sometimes the catarrh may give rise to the formation and discharge of long strips of membrane, either light or dark in color. This discharge is usually preceded by severe colicky pain. Such membranous catarrh is seen especially in nervous people. But chronic constipation, or more rarely chronic diarrhea, is the starting point of this morbid picture which is the subject of much discussion in medical circles at the present time.

Altho the sequels of chronic constipation may involve almost any part of the large intestine, we will consider here only those that affect the rectum, namely, hemorrhoids, fissure, and prolapse of the rectum. And since so many erroneous ideas prevail among the laity regarding the nature of hemorrhoids, it seems advisable to correct these erroneous impressions at more or less length.

Hemorrhoids, as is generally known, are dilated veins near the rectum or in its

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mucous membrane. They are due solely to local diseases of the rectum—most commonly to constipation, especially when it occurs in the lowest part of the bowels; in a few cases to diarrhea when localized in the rectum, but sometimes also when this part of the intestine is altogether normal. In the latter case there may exist a certain congenital and, as I have been able to prove, a familial predisposition to dilatation of the veins, perhaps also a special thinness of the wall and a deficient elasticity of the rectal veins. But hemorrhoids may also develop under wholly different conditions as, for example, following paralysis and the absolute rest in bed occasioned thereby; also in pregnancy, and in cases in which the circulation is impeded by tumors near the rectum.

There are three distinct varieties of hemorrhoids: intrarectal, situated entirely within the rectum; intra-anal, in the folds of the anus; subcutaneous, beneath the skin outside of the anus. A mixed form also occurs which is a com-

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bination of the first and second. The third form is the simplest and least harmful; it develops suddenly, causes no pain or at most only a slight discomfort in sitting or walking, and heals readily, as we shall see in a later chapter, generally in a



FIG. 2.—Internal Hemorrhoidal Nodules.

few days with no treatment beyond rest in a recumbent position. These external hemorrhoids, in contrast to the other varieties, never bleed.

The first mentioned form, the intra-rectal, is the most serious and most frequently occurring type of hemorrhoids. (Figure 2.) Here the hemorrhoids may

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remain for a long time firmly seated in the rectal mucous membrane and declare their presence only through occasional or frequent bleeding, or sometimes by appearing externally during or independently of defecation. After a long continuance of the hemorrhoids under the influence of increasing constipation, the nodules grow larger, become less firmly attached and are pressed out during evacuation. This final process occurs in four progressive stages: (1) The nodules are pressed out during defecation but slip back into the rectum without any special manipulation after the operation is completed; (2) the nodules do not slip back of themselves but only when pressed in by the finger or by some other maneuver; (3) the nodules come out, not only during defecation, but also under other strains as in walking, bending over, putting on one's shoes, coughing, or sneezing, and must always be pushed back into the rectum; (4) the hemorrhoidal nodules easily become caught in the anus and can be returned only with the great-

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est difficulty. These four stages, however, do not always follow each other in regular chronological order, altho they are often observed to do so.

The second variety of hemorrhoids, the intra-anal, is characterized by the fact that nodules remain wedged in the folds of the anus, and partly through mechanical interference with defecation, partly through bleeding, and partly as the result of the almost inevitable inflammation, are an incessant annoyance to the patient.

Patients, as well as experienced physicians, frequently mistake some small skin folds around the anus, that are harmless and therefore do not call for operation, for hemorrhoids. I am as often consulted by persons having these skin folds as I am by those with hemorrhoids. They hear of the troubles of people with real hemorrhoids, and, finding these pseudo-hemorrhoids on themselves become needlessly alarmed. It has often happened that patients who have had hemorrhoids successfully removed, have returned and insist that I take away these very harmless

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skin folds also, which, of course, I refuse to do. There are people also who are obsessed by the notion that itching is the chief symptom of hemorrhoids. This symptom certainly does occur in hemorrhoids, but it is merely a complication that is often caused or at least aggravated by the use of all sorts of possible and impossible salves.

Two other important points in the discussion of hemorrhoids call for brief mention: namely, the pain and the bleeding. As to the first, the prevailing idea that hemorrhoids must always be accompanied with more or less severe pain is by no means correct. On the contrary the majority of patients with hemorrhoids are free from actual pain; at most, the complaint is only of a slight feeling of pressure or other sensations in the rectum. When really severe pain exists in hemorrhoids the cause is almost always the pinching of the nodules in the anal ring. In such instances the pain is of such unbearable severity, as a rule, that the patient is scarcely able to walk or

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even to sit. Fortunately such cases are rare compared to the number of sufferers from hemorrhoids.

As to the second symptom, hemorrhage, it is to be emphasized that there may be hemorrhoidal nodules without bleeding or, on the other hand, hemorrhoidal bleeding without any nodular formation. This latter fact is not generally known by the laity but is incontestably true, as I have proved by the study of a large number of cases. Bleeding in hemorrhoids may vary greatly both in character and duration. As a rule, the earlier stages are marked by rare and scanty effusions of blood, but the bleedings increase in frequency and amount. There are many departures from this rule, however; thus, the first hemorrhages may be of great violence and repeated at short intervals; in other cases the bleeding may begin moderately and increase gradually, so that in the course of years the patient is reduced to a state of extreme weakness and anemia, and finally, there are cases, fortunately very rare, in which the bleed-

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ing is so profuse as to endanger life immediately.

There is a regrettable popular superstition, coming down from the Dark Ages, that the loss of blood in hemorrhoids is beneficial. This has often led to the delusion that every form of rectal hemorrhage is to be greeted as a favorable sign, altho possibly a malignant tumor may be the true cause; and this, if not recognized early, soon reaches a stage when a radical operation is of no avail. The symptom of repeated rectal hemorrhages occurring suddenly, especially in old age, should unquestionably be the signal for a thorough examination of the rectum. If the physician finds only hemorrhoids, so much the better; but if he finds some other serious condition, such as a new growth in the rectum, he will be as deserving of credit as will be the surgeon who successfully removes it.

The second sequel of chronic constipation, equally frequent, is fissure of the anus. This comes from a tearing of the external sphincter, or closing muscle, and

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almost always occurs at the posterior portion of the anus. The symptoms of this condition are very characteristic. It occurs suddenly and completely, almost always during a difficult defecation accompanied by straining which causes a superficial or deep tear in the closing muscle. In consequence of this the muscle is thrown into a state of strong contraction so that the introduction of a finger into the rectum is accomplished only with the greatest difficulty and at the cost of severe pain to the patient. Soon after the formation of the fissure, severe and at times unbearable pain occurs with each defecation and lasts for several hours thereafter. The patient looks forward to every evacuation with dread and tries in every way to postpone it. But this only makes matters worse, for when the muscle is widely stretched by hard fecal masses the pain is increased. Since the fissures may also occasion bleeding, the laity, in whom the dogma of pain with hemorrhoids is firmly rooted, often mistake the two conditions until an experienced phy-

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sician clears up the diagnosis. Incidentally it may be said that in some instances the two conditions may coincide, but in such cases the fissure pains are the most important. Besides fissure of the anus there may be small superficial ulcers within the rectum, a condition that does not seem to be well known. These also may cause more or less pain during defecation, or they may be symptomless. In any case the pain caused by them is always much less severe than that due to fissure.

Finally, we have to note a sequel of chronic constipation as important as it is distressing, namely, prolapse of the rectum. This may occur in early childhood for the reason that the anal sphincter is less powerful at this age than in adults. Even in adults, however, the occurrence of rectal prolapse as a sequel of chronic constipation is by no means rare. When it occurs in childhood we must assume a congenital or acquired weakness of the sphincter. And when this is added to the constant irritation of the rectum by

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the impacted fecal masses there is gradually developed an inflammation of the bowel in the course of which the muscle becomes still further weakened and yielding. At first we find a so-called anal prolapse shown by a slight bulging of the rectal mucous membrane which, however, goes back of itself after the evacuation. But when the causal constipation persists, then longer segments of the intestine come out, not only during defecation but upon coughing, stooping, and other movements, and these segments must be pushed back by the hand. As the result of this continual sliding out and in, the rectum becomes the seat of an increasing inflammation with mucous and sometimes bloody discharges. This trouble is not dangerous and is seldom attended with much pain, but it is extremely tormenting, marring the joy of existence, and making the patient a slave to his bowels.

CHAPTER V

A SYMPTOM IN OTHER DISEASES

EVERY internal disease, including those of organs having no connection with the bowels, may be accompanied with chronic constipation. The explanation of this is that chronic constipation is one of the most ubiquitous of diseases. While it would be a foolish exaggeration to say that there is any relation between them in all cases, there are nevertheless many internal diseases in which constipation is a well-marked symptom. Among these are diseases of the upper digestive tract including the liver and the gall-bladder, and especially disorders of metabolism. In diseases of the esophagus, especially when there is a narrowing of this tube, constipation is the rule. But even without mechanical obstruction of this organ,

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any difficulty in swallowing, from whatever cause arising, may result in a pronounced depression of the intestinal functions.

As to the stomach, the fact is known to all physicians that in any disease causing an increased secretion of acid in the stomach, there is a tendency to chronic constipation. On the other hand, disorders marked by a deficiency of acid secretion cause a tendency to diarrhea. The cause of these intestinal disturbances is not yet entirely clear, in spite of much study and investigation. While I shall not discuss the many hypotheses that have been advanced, it should be mentioned that some very experienced physicians believe that when abnormal acidity and constipation coexist the former can be cured by regulating the bowel function. I do not agree with this view, for I hold the belief that it is the abnormal acid secretion which restricts the activity of the intestine in some way not yet understood.

One can easily understand the occurrence of chronic constipation in all stom-

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ach diseases in which the passage of food into the intestine is impeded by a narrowing of the exit or by a pronounced weakening of the gastric walls (dilatation of the stomach). It is evident that disturbances of this kind must result in a delayed passage of wholly or half digested masses into the intestinal canal. If there is vomiting also, as is frequently the case, a loss of fluid follows with consequent thickening of the contents of the bowel. This condition may be intensified by the fact that the retention of food in the stomach gives rise to an increased secretion of gastric juice or to a mucous discharge, thereby further reducing the body fluids and causing a general inspissation of the tissues, including also the bowels.

Besides these organic diseases of the stomach many forms of gastric neuroses are associated with chronic constipation. One such combination occurs in patients whose appetite has become more or less diminished or who attribute their stomach trouble to one food after another

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until their diet is reduced to tea or thin soups. In such a case we find the above described alimentary constipation.

Chronic constipation may also occur in association with the more or less common nervous vomiting. And finally, gastric and intestinal disorders may appear simultaneously, resting on the same nervous basis. Whether we are dealing, in the latter instance, with a merely consecutive or a purely fortuitous combination, or whether a causal relation exists between the two, will be at times a subject of dispute between the most expert diagnosticians.

Among other diseases often associated with a slow intestinal peristalsis are those of the liver and bile passages. Numerous experiments on animals have demonstrated that if the bile ducts are ligated the intestinal action is greatly lessened, and clinical experience has also shown that even a slight diminution in the amount of bile passed into the intestine can influence peristalsis very unfavorably. The best example of this is

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afforded by gallstone disease. Of many thousand patients of this kind whom I have observed I can recall very few who said that their intestinal functions were normal, and not one who complained of diarrhea. Almost ninety per cent. of my patients with this trouble—of women fully ninety-five per cent.—suffered from chronic constipation. This is of practical significance in that it demonstrates that regulation of the bowels is an essential factor in the betterment or cure of gallstone disease. Is it possible that the indubitable benefit of the Carlsbad treatment is due to such regulation of the bowel function? I doubt this myself, tho I freely admit the great value of regulation of the bowel in diseases of the liver or bile passages.

Not always, but often enough, we see chronic constipation as one of the symptoms of diseases of metabolism, especially of obesity, diabetes, and gout. This disorder in obesity can be accounted for in several ways: The obese put on flesh, in the first place, because they take but little

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exercise, and, secondly, because they prefer foods which diminish the metabolic processes and lead to the deposition of an excess of fat. When once obesity is definitely established we encounter a reciprocal action which is difficult to overcome: The patients exercise little, thereby taking on more fat and at the same time diminishing their intestinal activity; or else they eat little in order not to gain more flesh, and while this acts well as regards the making of fat, the diet generally contains too little material to stimulate intestinal peristalsis. The obese are also usually forbidden to take a large amount of fluid, and this leads to inspissation of the bowel contents. And finally, fleshy persons are disposed to perspire freely, so that what fluid is taken in does not serve to thin the material in the intestines, but is evaporated.

Sluggishness of the bowels and constipation are likewise seen in diabetes. In former times diabetics were advised to consume large quantities of meat, but aside from the modern view that a large

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intake of proteins increases the excretion of sugar, is the fact that it also causes a notable slowing of peristalsis. We know to-day that the best means for restricting sugar production is by the reduction of proteins in the diet to the lowest possible figure. In spite of this we often find a diminished intestinal activity in diabetes when the diet is not well chosen. The diet of diabetic patients can be regarded as satisfactory not only when the sugar production is reduced, but when the intestinal function also is brought back to normal. In what way such results can be obtained will be considered in a later chapter.

In gout also the occurrence of chronic constipation, either in its simple form or accompanied by severe colic, is frequently observed. The latter variety is sometimes called intestinal gout. A close relation must exist between the condition of the intestinal tract and gout, for the experience of many physicians has shown that the attacks of gout often alternate with diarrhea in such a way that the

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former disappears suddenly upon the appearance of profuse watery stools. I have often observed chronic constipation as a symptom of gout in elderly patients. Probably this is to be regarded as the result of incorrect life habits and of faulty diet, such as the eating of too much meat and highly seasoned food and the drinking of heavy wines and other spirituous liquors. However, these injurious influences are not always the cause of gout, for there are many other factors that we will not consider at this time.

In addition to the diseases just mentioned, chronic constipation is often the accompaniment of all sorts of nervous disorders, whatever their seat and character. We have spoken of the important rôle which the sympathetic nervous system plays in the regulation of intestinal peristalsis, and we have shown that psychic influences, whether they affect the heart, the thyroid, the adrenal bodies, or other organs, may be associated with digestive disturbances and especially with disorders of the intestine. It is evident,

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of course, that the addition of gastro-intestinal disturbances plays no decisive rôle in the disease, yet one should never leave out of consideration the possible retardation of the digestive functions so often met in just such cases.

CHAPTER VI

COURSE, DURATION, AND PROGNOSIS

AS ITS name implies, habitual constipation is a chronic disease. While on the one hand, we see many persons whose intestinal pendulum swings with the precision of clockwork from birth to death, on the other we see many more who complain from childhood to the grave of poor digestion. In the course of a long life and under the influence of various circumstances and all kinds of treatment, the latter may experience occasional periods of improvement or relief, but as a rule these are only temporary.

One of the most remarkable and instructive examples of the influence of an altered mode of life was furnished during the World War in the countries where

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dietary conditions were essentially simplified, as in Austria, Germany, and Russia. In these countries, especially among the Russians who were already weakened by under-nourishment, and who normally suffer from constipation in high degree, the restriction to a few articles of diet, such as bread, grits, and potatoes, was followed by a marked decline in the intensity of this disease, despite the great psychic disturbance caused by war and revolution. This mass experiment further demonstrated that as soon as the normal conditions of nourishment began to be restored, in Germany at least, all the former gastric and intestinal disorders reappeared in equal or greater degree, especially in those who endeavored to get back their lost flesh and to renew the pleasures of the table as soon as possible. If further proof were needed that constipation is a disease of civilization and the result of the more refined dietary of our time, it was furnished in the most positive manner by this mass experiment.

In close connection with this, one might

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ask, What, then, are the prospects of the cure of chronic constipation? These vary greatly and depend upon a large number of conditions such as the duration of the disease, the business or occupation of the patient, his eating habits, previous beneficial or harmful methods of treatment, and, in very great measure, the determination and intelligence of the patient. All in all one may say that, given the existence of the last named factor, the prospects of a cure of chronic constipation are the best imaginable. As an encouragement to those who have long since abandoned any treatment of their malady, or who have had recourse again and again to the latest new purgative on the market, I do not hesitate to say that numberless cases of constipation of from twenty to thirty years' duration are known to me which, through force of will, steadfast determination, and an understanding of rational methods of treatment on the part of the patient, have terminated in lasting cures.

PART II

PROPHYLAXIS AND TREATMENT OF CONSTIPATION

CHAPTER I

PREVENTIVE MEASURES

THE most difficult period in the prophylaxis, or prevention, of constipation is that of childhood. This is especially so when there is an inherited tendency. When this condition declares itself in the first years of life by irregular or delayed defecation, the regulation of the intestinal function demands the greatest care. Regularity must be insisted upon at all costs, and the mother must determine that the amount of the stools is sufficient. This is especially important during school life. Such supervision can not be left to maids or governesses, who have neither the necessary understanding nor interest in the intestinal hygiene of their charges; hence, what might have been a simple intestinal sluggishness may develop in a short time into actual constipation.

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The usual trouble is that the children are not awakened early, and, obliged to gulp down breakfast in great haste for fear of being late to school, have naturally no time for a quiet response to a call of nature. The mothers should be led to realize the great importance of regularity and see to it that at least an hour and a half is available for washing, dressing, breakfast, and attention to the bowels.

Exercise and diet are also important. Many children develop the habit at an early age of sitting around the house, reading everything that comes into their hands, and escaping as often as they can from the gymnasium and swimming classes and avoiding play. This tendency should be energetically opposed by the parents. Children should spend two hours daily in play or gymnastics, swimming, bicycling, or skating. When they say they don't want to, they should be bribed or coaxed, or, when necessary, forced to take adequate exercise. If they complain that they are always too tired, a medical examination should be made

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to determine whether school attendance or housework is really fatiguing them or whether they may have acquired some incipient disease—in young girls it may be the beginning of the menstrual life. When the cause is discovered and removed, the matter of sufficient exercise must again be taken up.

The diet should consist chiefly of vegetables, fruit, butter, sugar, eggs, milk, and rye bread. Meat and fish must hold a subordinate place in the menu. It is not advisable for children having a tendency to constipation to eat meat every day; a little meat two or three times a week with the vegetables will be sufficient. But on the other hand an abundance of vegetables and fruit should be found on the table at all times, and these should be varied as much as possible so that the children may not lose their appetite and enjoyment of food by reason of monotony in diet. Sweets, especially cookies, and white bread, chocolate, candy, and such like dainties should never be placed before the children, and the parents would

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do well for the sake of example to forego themselves indulgence in all sweetmeats and the like. If the children spend their allowance for such sweets it should be taken away from them, but if the allowance is used for the purchase of fruit the parents should double it.

Another very important question is how children with a predisposition to constipation should spend their holidays. The worst plan possible is to take them to a fashionable resort, with its restless hotel life, its table with an overabundance of meats and highly seasoned food, its concerts and dancing. In just such resorts is the foundation laid for the development of all sorts of stomach and bowel troubles, and if the children are already predisposed to intestinal irregularity the evil will be increased. Children with sluggish bowels had better be sent, under the care of a teacher, to the country where they can live under conditions that may be primitive but much more healthy. According to their ages and individual preferences, they will then have the op-

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portunity to help in the garden or in the field, to ride, swim, row, or bicycle, or to go on excursions in the neighborhood. They will also have the food that is best for them—vegetables, buttermilk, fruit, eggs, rye bread, and salads—and all this, as it were, at first hand. Such are in very deed recreation cures from which the children will return to their homes with healthy digestive organs, and especially with well-regulated bowels.

A note of warning must be sounded against a fault that many mothers commit through ignorance; that is, the use of laxatives for children who are predisposed to constipation. Useful as a laxative may be when given to a child at the right time, equally harmful is its repeated administration when a tendency to constipation exists. When such treatment is once begun, children quickly become dependent upon it; and what was formerly simply an incomplete evacuation will become an actual constipation. If artificial aid is needed one should resort to the less harmful enemas.

CHAPTER II

THE TREATMENT OF HABITUAL CONSTIPATION

AT FIRST thought it might seem superfluous to ask what the purpose of treating chronic constipation is, for naturally one hopes to regain one's liberty through a cure of the ailment. But what is meant by a cure? The demands of the patients are naturally very comprehensive. They want a complete restoration of the regularity of their bowel functions without artificial means, without enemas, without pain or discomfort of any kind, and also, so far as possible, without any restriction of their former mode of life or interference with business. A cure under such exacting conditions is naturally an impossibility, for we are not dealing, as a rule, with a simple chronic disease, but with one that may date back

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years or even decades, and it is a manifest injustice to demand all from the physician and nothing from oneself.

The patient who would be freed from an obstinate ill must help, must follow the doctor's line of thought, and must act on his advice to the very last detail. Above all, he should not throw up the game at the first failure, and say to himself or to his friends after only a few days' trial that "the treatment is no good." In other words, the physician, if he is to hope for success, must call on the patient for two allies—understanding and determination. The man who does not possess these two qualities is a hopeless case and must be left to pursue his own way until he comes to his senses. But to one who possesses energy and understanding the physician may often be able to promise a result better than the patient had perhaps dared to hope for. I say "often," but this is by no means without exception, for the entire history of the disease plays an important rôle in its prognosis. One must take into consideration not only the

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age of the patient and the age of the disease, but also the nature and seat of the trouble, as discussed in Chapter III of Part I, and last but not least, all the therapeutic measures that have been previously employed. All these factors individually and collectively exert a marked influence on the prospects of a cure.

As an example: The prospects of securing a lasting regulation of the intestinal functions in the young when the constipation has been of short duration and when laxatives have been used only occasionally, are to be regarded as distinctly more favorable than in older persons who have suffered from the disease for decades and who have abused their systems with purgatives for long periods. I want to make this especially emphatic. When the gamut of purgatives, from the mildest up to the most powerful, has been run through in a few years and when it has come to the point that the stronger remedies have little or no effect, then, even in children, the most assiduous attention on the part of the physician and the

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most complete cooperation on that of the patient will be called for to effect a cure. Whether the intestinal activity can be fully regained in such cases can not be foretold with certainty. But even in such mishandled cases a relative restoration, at least, can be expected.

Other points in the history of the case have an important bearing on the treatment of constipation, namely, hereditary or familial influences, the extent of the patient's activities, his daily occupation, the proportion between rest and exercise, the quality and quantity of his food, his usual meal times and their regularity or irregularity, the condition of the upper digestive tract, especially of the stomach, and the history of previous diseases, especially those of nutrition, of the blood, and of metabolism. All these points must be inquired into minutely before treatment is begun. The more exactly we inform ourselves regarding every individual detail, the more we take into consideration all the healthful or injurious influences, so much the more secure

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will be our plan of treatment. If we have to do with office workers, scientists, literary men, or others following sedentary occupations, we must urge a change in their activities. How this is to be accomplished in individual cases will call for much deliberation—perhaps also for a sort of compromise between what the physician would recommend and what the patient can accomplish.

But at the other extreme are those sufferers who are always in a hurry and whose business sends them rushing about in automobiles or trains. One must advise them to take a couple of weeks' rest, especially when in addition to being constipated they are pale, thin, and worn out with their work. When such patients can not at once get a complete rest, they should at least try to relax a little and pull themselves out of the rut of their overwork, altho we can not hide the fact that we can hope for only slight success through such partial payments. If the trouble arises from irregularity in meals, emphasis must be placed upon the neces-

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sity of having meals promptly. Furthermore, they should be advised that sufficient time must be taken for slow eating and proper mastication, and also that the meal hour should not be shortened by all sorts of interruptions, such as telephone conversations, business talks, or the reading of newspapers or books.

Of great importance in the treatment of chronic constipation is the habit of punctual visits to the toilet. I have already emphasized this in the previous chapter on prophylaxis, and it applies to adults as well as to children. Either a morning or an evening hour may be taken as the normal time for defecation, but the first is far preferable. Some patients, however, find it better in their experience to give preference to an evening hour; and this is the case especially with sufferers from hemorrhoids having a tendency to extrusion. In these, the reposition of the nodules demands special manipulations which can not be carried out if the patient is hurried, therefore the evening is selected so that the reposition

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can be made more conveniently; the subsequent rest in bed in the recumbent position also secures the retention of the nodules within the rectum. In all other cases, however, the morning should be the time selected for the daily evacuation.

But the main thing in the treatment of chronic constipation is the diet. The term "constipation diet" has been used, but this might give rise to the belief that there is a special diet, suitable for all kinds of constipation, which may be made applicable to each and every patient by simply imprinting it with a rubber stamp on a sheet of paper. I would earnestly warn the reader against any such misconception, if for no other reason than that, as we have already seen, constipation is frequently a symptom or a complication of other diseases. A stout man must be treated in different fashion from the emaciated or anemic one; the one suffering from a stomach trouble from the one with intestinal catarrh; the diabetic from the nephritic; the young from the old—in

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other words we must treat the patient and not the disease.

A discussion of the details of treatment will follow in later chapters. Here I shall give only a few suggestions regarding the composition or, as I have called it, the strategy of the diet. I hold the opinion that a good diet, that is, one producing beneficial results, is one of the greatest works of art that the physician can produce. However, this work can be completed only in exceptional cases in the course of a single visit. In talking with my patients I usually compare this to another work of art which, as every one will admit, is much easier to produce, namely, the making of a dress or of a suit of clothes. Every one knows that this requires a number of fittings during which some slight change must be made, here a little too long, there a little too short, in another place a little too tight or too loose. And all these changes must be successively tried until the dress or the coat fits perfectly. In the matter of diet, which bears about the relation to the

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tailor's art as a dynamo does to a child's toy, things are, as we can easily imagine, very much more complicated. But the two have in common the necessity of repeated trials and changes until the aim which the maker has in view is fully reached. Especially in cases of constipation does the diet call for a proving under various circumstances, demanding much time and patience on the part of both the physician and his client.

Suppose, for example, that the diet has had the result which we looked for, namely, that the intestine has begun to act of itself. Even so, victory may not yet have been achieved along the whole line, for it is still questionable whether the action of the intestine is sufficient. Perhaps the bowels act well, but the patient complains of a feeling of pressure or of pain or of gas accumulation; he may be getting stouter week by week, or, on the other hand, contrary to expectation, he may not be gaining in weight; the stomach may be digesting certain elements of the diet with difficulty. All these and

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many other points call for careful and repeated correction until the diet does literally fit like the coat made by a good tailor.

Even then it may seem as tho everything humanly possible had been attained; but no! after a time the diet, however effectual it may be and however grateful the patient may be to the physician, becomes a constraint and a burden and the patient complains of the deprivation which it entails. His desire for certain changes and a loosening of the fetters is very natural and even justifiable; but it must be determined to a certain definiteness how far changes are possible, and a limit must be fixed beyond which the physician can not go without endangering the results already obtained with so much difficulty. Methodical proving is indispensable for this, and on the outcome of such a trial will depend whether the original diet must be firmly adhered to or the patient can be rejoiced by concessions.

Let us suppose a favorable case: All

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difficulties are overcome, the bowels have acted for months in a perfectly normal manner, the local and general conditions leave nothing to be desired. Then, one day, the patient springs the dreaded question, "When can I return to a normal manner of living?" This question, so readily appreciable, brings new difficulties to the physician. Certainly, the crown of his endeavor is reached only when the patient is free and independent of all dietetic restrictions. But when we recall that most people do not seek medical advice until they have first emptied the entire arsenal of laxatives and purgatives, we need not be surprised if the return to a customary living is possible, if ever, only after a long and patient use of the prescribed diet. On the other hand, in milder cases, such a goal is often reached, not, of course, at a bound, but only through various intermediate steps.

Many patients make the great mistake of calling themselves cured after a certain period of normal intestinal action, and then return to their former unhygienic

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mode of life. When these people discover, to their great astonishment, that their bowels are again beginning to work insufficiently, irregularly, or not at all, then they assert that the treatment prescribed for them was only temporarily effective. If they now seek advice of another skilful physician and he in turn discourses on the great value of a rational dietetic treatment, they reject it with scorn, feeling that they have had enough of such half-way measures. Of course, this is absurd; the diet had indeed an excellent effect, but the patient made the mistake of abandoning it too abruptly. One can not forget that the dietary regime may need to be guarded to some extent for years; that a slight remainder of the intestinal sluggishness will persist and that the pendulum of the large intestine will not be free from a little stammering for years to come.

This long explanation might make it appear as tho a cure of constipation was an exceedingly tedious procedure, one that greatly inconvenienced the patient

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and called for constant and uninterrupted consultation between physician and patient. This is not so. He who brings to his cure a certain measure of understanding, conscientiousness, and determination will be able to make slight changes or modifications in the diet by himself, and only an occasional visit to the physician will be needed to determine some other necessary changes in the dietetic details.

Diet is not the only effective measure in every case of chronic constipation. In the form seated in the lower portion of the large intestine or in the rectum one can hardly expect complete relief through diet alone, altho it may prepare the ground for the various therapeutic measures demanded.

Altho diet is unquestionably the most effective and rational mode of treatment for intestinal sluggishness, it must be supplemented in individual cases by other measures. Among these are massage, exercises, mineral water cures, electricity, gymnastics, and hydrotherapy. These

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methods will be discussed in detail in later chapters.

Still another accessory measure is found in the use of cathartics. As there are many false ideas regarding these among the general public it may be well to discuss them briefly at this time. The fact should first be emphasized that here and there men are found who take a laxative, usually a mild one, day in and day out and not only keep their bowels functioning regularly but also feel perfectly well in other respects. Generally such persons come under observation not as intestinal patients but for the relief of some other trouble, and it is only in answer to our questions that they tell us of the beneficial action of the laxative they take. Should we forbid them to take any more drugs and swing them over to a special diet? I think not. The diet in such cases would be much more troublesome than the harmless laxative. But in my experience the number of these lucky individuals is unfortunately comparatively small. Most people who begin with

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mild laxatives must use progressively more powerful ones, and finally are driven to taking the strongest purgatives until even these produce unsatisfactory results or none at all.

There is a further and large class of sufferers in whom the action of any cathartic becomes dulled in a surprisingly short time, sometimes after a few weeks or even a few days. Other individual cases occur where regulation of the bowels can be secured by one or another cathartic, but only at the cost of pain or other unpleasant sensation in the abdomen. Finally, there are persons with whom little or nothing can be accomplished with even the most drastic purgative, but to whom an enema brings prompt relief. Such are the cases in which the stoppage is located in the lowest part of the large intestine, often in the rectum.

Leaving out of account these exceptional cases, the treatment of constipation with laxatives is in general to be regarded as at best a necessary evil. Never can a cure be effected, as with diet. They do

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indeed give the pendulum of the large intestine a little shove that keeps it going for a brief time; but it stops again and requires always renewed and stronger impulses to start it going. Nevertheless, as we shall see later, there are conditions and stages of chronic constipation, in which cathartics can not be altogether dispensed with; but we should then choose the least harmful among them and use them as seldom as possible and in only just sufficient dosage to produce the desired effect.

CHAPTER III

SPECIAL DIETARY PRINCIPLES

INTESTINAL peristalsis, as we have already seen, derives its impulse through an automatically acting nervous network. If the action of the latter is through any cause interfered with and is slowed or occurs only now and then or ceases entirely, it is then the task of diet to start it going again or to restore its normal rhythm. In what way this is effected by dietetic measures, that is to say how the diet through its different factors can stimulate the nerve supply of the intestines to more vigorous action, is as yet purely a matter of experience. We can only say this, that the action of cathartics on the one hand and that of dietetic measures on the other actually bear a certain resemblance to each other in spite of their many differences. To give an example: there is no

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fundamental difference between stewed rhubarb and rhubarb powder, between dried figs and fig syrup, between sour milk and the lactobacillin introduced as a scientific medicine by Metchnikoff. The only difference is that the medicinal laxatives, especially in large doses, often produce unpleasant by-effects and never, however long they may be used, will restore the normal intestinal function; while dietetic treatment, however great the amount of individual ingredients, will bring about a cure practically always in the mild cases and often even in the most severe ones.

Among the articles of our ordinary diet I have found numerous substances which act as natural exciters of peristalsis; and on the other hand they also contain products which exert a contrary effect. The healthy man chooses according to his taste and instinctively, as it were, selects the mixture that his experience has shown will keep his intestinal functions in a condition of equilibrium. He often corrects any slight retardation of peristalsis by

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suitable modifications or additions. A person suffering from intestinal sluggishness who drinks a glass of cold or hot water the first thing in the morning or, better yet, at the same time eats fruit of some kind, employs a very suitable accessory method. But the situation is very different when, through one cause or another, chronic constipation is already established. In such a case the self-selected food no longer furnishes the needed stimulus for restoration of the normal swing of the pendulum, and an essential modification is demanded. Often a patient believes that the addition of some simple article of diet will suffice. Many think they can cure their constipation by taking a quantity of fresh fruit or sour milk or some similar milk product during the day or, as I have just said, in the morning. In many cases the desired result can be secured in this way, but it is only of brief duration, and the effect is seldom lasting. Just as the intestines soon become unresponsive to cathartics, so they do to otherwise rational accessory means

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when these are presented in unsuitable form.

The principles governing the treatment of constipation consist, in my opinion, in the most careful observance of four cardinal rules.

1. The diet must contain a sufficient number of calories for the support of the body. The man engaged in moderately severe labor needs daily about 2,400 calories, or about 18 calories per pound of body weight, of which from 60 to 80 must be derived from proteins, the rest from nitrogen-free substances (carbohydrates and fats). Whether we meet the protein requirement by animal or vegetable albumin is in itself unimportant, but for our present purpose it is better to give the preference to plant albumin, for aside from being free from injurious by-products, it offers the advantage of being associated with an abundance of carbohydrates and cellulose, as shown in the following table:

	<i>Albumin</i>	<i>Fat</i>	<i>Carbohydrate</i>	<i>Cellulose</i>
Bean-meal ...	26.6%	1.6%	59.4%	1.5%
Pea-meal	23.2%	2.2%	59.1%	1.4%
Lentil-meal ...	23.5%	1.5%	59.8%	2.0%

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Flour or meal of various grains, such as wheat, rye, barley, and corn, contains a considerable amount of albumin and carbohydrate but is inferior to the leguminous meals in cellulose content. These are naturally much richer in cellulose when uncooked. But, in any case, it is possible to meet the nutritional needs of man fully without any animal albumin. In the treatment of constipation we make extensive use of this fact, altho not always to the degree of excluding animal albumin wholly and permanently from the diet, but only of restricting its use. The diet must not become a burden to the patient, but should be a source of pleasure and enjoyment (often the only enjoyment he has).

Besides the actual energy givers, the diet must also contain a sufficient quantity of mineral salts, especially sodium chloride, lime salts, phosphates, iron, and probably also sulfur.

2. The diet must contain as many laxative constituents as possible. Practical experience has taught us to recognize a

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large number of such peristalsis-stimulating dietetic substances. These can be grouped under the following heads:

a. Sugar-containing substances. Such are ordinary cane-sugar, milk-sugar, mannite, fruit-sugar, grape-sugar, sweet whipped cream, and fruits rich in sugar content (plums, grapes, figs, oranges, dates, etc.), all the latter in candied form especially.

b. Articles containing organic acids, such as buttermilk, sour milk, kumyss, yoghoort, zoolak, Bulgarian milk; also the fruit juices, such as cider, currant wine, gooseberry wine, lemonade; and acid fruits (apples, cherries, gooseberries, currants, etc.). Rye bread, whole wheat bread, and similar bakery products also belong to this category by reason of the sour dough from which they are made.

c. Salts, the simplest of which is common table salt; also the various articles containing it in quantity, such as the saline mineral waters, salt herring, caviare, sardellen, anchovies, smoked fish, etc. Pickles also belong in this group.

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d. Substances containing or forming carbonic acid. Here belong the natural or artificial effervescing waters and also the simple acidulated alkaline spring waters, the effervescing American "soft drinks," and Bulgarian milk and kumyss, already mentioned under group *b*. Yeast and bread made with yeast may also be included in this group; and finally also a number of the so-called "flatulent" vegetables, such as beans, which doubtless produce carbonic acid among the other gases.

e. Fat-containing substances which exert the action of the fatty acids by reason of their large fat content. Among the simplest articles of this group are butter, olive-oil, sesame-oil, and also linseed-oil and other fats that are commonly regarded, and rightly so, as difficult of digestion. Perhaps the use of flaxseed, of which mention will be made later, depends for its efficacy upon its rich fat content. Here, on account of their richness in fat, are to be named also the so called mayonnaise dressing, Italian sal-

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ads, and especially salads dressed with oil.

In addition to these chemical intestinal stimulants we have certain other thermic and mechanical agents, as follows:

f. Of the thermic agents the most common, of course, is *cold*. This is most conveniently applied in the form of cold water or milk, and especially cold sour lemonade. Cold soups, such as fruit soups, exert a certain thermic effect in addition to their ordinary activity. Iced fruit and fruit ices, however, are less effective because they are usually taken at the end of a meal on a full stomach when their temperature is quickly raised to that of the other contents. Indeed the action of all these substances is essentially dependent upon the degree of fulness of the stomach. The best time, therefore, to obtain the thermic effect is when one is fasting, and the daily practise of drinking a glass of cold water the first thing in the morning makes use of that.

g. The mechanical action of food is manifold. The more indigestible residue,

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or roughage, that a food contains the better is it adapted to serve as an intestinal stimulant. And on the other hand the more completely the food is used up in the intestinal canal the less suitable is it for the treatment of chronic constipation.

Many exact analyses have given us information regarding the utility of individual articles of diet. The two very instructive tables herewith reproduced

PERCENTAGE OF NONABSORBABLE CONSTITUENTS

	<i>Dry Substance</i>	<i>Albumin</i>	<i>Carbo- hydrates</i>
Boiled and Baked Meats...	4.9-5.3	2.0-2.6	—
Shell Fish	4.3	2.5	—
Hard-boiled Eggs	5.2	2.6	—
Milk			
Fresh White Bread made of the Finest Flour	4.2	21.8	1.1
Rolls	5.6	22.2	2.9
Rye Bread, of coarsely milled grain	13.1	36.7	2.9
Rye Bread made of the whole grain	20.9	46.6	14.3
Pumpernickel	19.3	43.0	13.8
Rice	4.1	20.4	0.9
Peas	9.1	17.5	3.6
String Beans	15.0	—	—
Beans	18.3	30.2	—
Mashed Potatoes	9.4	30.5	7.4
Savoy or Crisped Cabbage..	14.4	18.5	15.4
Carrots	20.7	39.0	18.2

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PERCENTAGE OF CELLULOSE IN VEGETABLE FOODS

	<i>Uncooked Food</i>	<i>Dried Food</i>
Wheat:		
Whole Grain	2.6	3.0
Bran	18.0	20.0
Germ	1.8	2.0
Endosperm	0.7	0.8
Bread:		
White Bread	0.3	0.5
Whole Wheat Bread	1.5	3.0
Scotch Oatmeal	3.1	3.2
Edible Part of Vegetables:		
Hariçot Beans	4.0	5.0
Beet-root	3.0	29.0
Lentils	2.0	2.3
Asparagus and Onions	2.0	19.0
Parsnips and Artichokes	2.0	10.0
Turnips and Carrots	1.6	15.0
Vegetable Marrow	1.3	25.0
Cauliflower	1.2	13.0
Rhubarb and Mushrooms	1.1	19.0
Cabbage and Tomatoes	1.1	15.0
Lima Beans	1.0	1.1
Spinach, Sea-kale, and Celery ...	0.9	15.0
Watercress	0.7	10.0
French Beans	0.6	6.0
Potatoes	0.6	3.0
Cucumber	0.5	13.0
Lettuce	0.5	8.0
Green Peas	0.5	2.5
Boiled Rice	0.3	0.7
Fruit:		
Bilberries	12.2	48.0
Dried Walnuts	7.8	8.0
Raspberries	7.4	48.0
Dried Figs	7.3	9.0
Dried Dates	5.5	7.0
Currants (red, black, and white) .	4.6	32.0
Plums	4.3	20.0
Greengages	4.1	36.0
Cherries	3.8	23.0

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PERCENTAGE OF CELLULOSE IN VEGETABLE FOODS—*Continued*

	<i>Uncooked Food</i>	<i>Dried Food</i>
Peaches	3.4	31.0
Pears	3.1	20.0
Gooseberries	2.7	19.0
Apples	2.7	16.0
Grapes	2.5	22.0
Strawberries	2.2	19.0
Oranges	1.5	13.0
Melons	1.0	22.0
Bananas	0.2	0.8

are from Rubner and from Robert Hutchison, respectively.

From these tables we see that the stimulant effect upon peristalsis of the individual articles of diet varies greatly. For convenient reference I have prepared the following table in which the different foods are indicated as strongly, moderately, and slightly stimulant to peristalsis, these being marked by I, II, and III, respectively. The various comestibles are presented in groups in such a way that the reader can see at a glance which of them cause the greatest amount of constriction. The articles are presented in the order of their action and include bread, sugar, oils and fats, vegetables,

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salads, milk products, fruit and fruit-juices.

TABLE OF FOODS WHICH PROMOTE PERISTALSIS

Bread:		Potatoes	III
Whole Wheat Bread		Beans	II
I		Milk Products:	
Graham Bread	I	Fermillac	II
Pumpernickel	I	Zoolak	II
Rye Bread	II	Yoghhoort	II
Sugar:		Bulgarian Milk	II
Cane-sugar	II	Kumyss	II
Grape-sugar	I	Cream Cheese	II
Fruit-sugar	I	Buttermilk	II
Milk-sugar	I	Fruit:**	
Mannite	I	Plums	I
Honey	I	Apples	II
Oils and Fats:		Peaches	II
Cream	I	Grapes	II
Butter	I	Pineapple	II
Lard	I	Grapefruit	II
Goose Fat	I	Figs	I
Vegetable Fat	I	Oranges	III
Bacon	I	Mandarin Oranges	II
Vegetables:		Nuts, Almonds	II
Lentils	I	Gooseberries and Currants	II
Yellow Peas	I	Strawberries	II
Green Peas	II	Candied Fruit	I
Cabbage	I	Fruit Juices:	
Kidney-beans and White Beans	II	Cider	II
Spinach	II	Gooseberry Wine	III
Carrots	I	Grape Juice	II
Savoy or Crisp Cabbage	I	Currant Wine	III
Salads:*		Raspberry Juice	III
Tomatoes	II	Lemonade	III
Head Lettuce	II	Orangeade	II
Celery	II	Tobacco: (in moderate use)	III

* If salads are prepared with much oil their stimulative action is greatly increased.

** By the addition of sugar to various fruits the stimulative action is increased.

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To aid the reader to understand the peristaltic power of the comestibles tabulated above, it may be serviceable to point out to him that rye bread, cane-sugar, green peas, beans, and spinach, for example, are less likely to produce constriction than whole wheat bread, grape-sugar, honey, cabbage, carrots or lentils. From this table we can select a combination of foods of strong or moderate action as a regular diet, depending upon the degree of constipation as the guide. Where the constipation is far advanced, for example, preference must be given to a purely vegetable diet for many months; and instead of meat and fish, eggs in large quantity and prepared in various ways must be used. The egg dishes do not belong to the group of substances which increase peristalsis, but if they are prepared with much butter or with bacon or in the form of omelets with vegetables, jam or marmalade, or oily mayonnaise dressing, their inhibiting action on peristalsis will be entirely overcome. When,

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after the exclusion of meat and fish, the intestines have worked well for several weeks, it will be permissible to add one, and, later on, two, meat or fish dishes a week. Preference should be given at first to fat meats and fish, such as mutton or pork, or salmon, eels, carp, herring, and sardines in oil. In the course of time the allowance of meat and fish may be more liberal, but even when everything goes well such dishes should not be eaten more than once a day.

When a certain measure of success has been obtained, but the result is not entirely satisfactory, one should select the most active of the peristalsis-exciting substances, such as butter in generous amount, cream, sugar, fruit, fat-containing vegetables, stewed fruit, salads, coarse bread, sour milk, cream cheese, oily mayonnaise,—all of course in suitable form and in well-ordered succession. Even when the stomach and the other digestive organs are acting well, we can not expect that everything and anything

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can be eaten with impunity, for even people in perfect health will now and then be upset by something they have eaten. Then the offending substance must be replaced by one that agrees better, altho that one may need to be taken in larger quantity.

When we have to deal with an especially obstinate constipation of many years' standing, caused by the abuse of purgatives, the constipation diet alone may fail us. Still, I think it would be a mistake to abandon it in these cases and I favor its continued use even under these difficult circumstances. We gain by this, when it is followed with patience and energy, at least this much, that the patient can regain complete normal functioning of the bowels without pain or other discomfort by the use of a very mild laxative. In the further course of the treatment we can attempt now and then to dispense with the laxative. It is not superfluous to warn the reader that the institution of the constipation diet should be preceded by a thorough clearing out of

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the intestinal canal by means of a suitable purgative, preferably castor oil, bitter water, or Epsom salts. If this precaution is neglected difficulties in the operations of the diet are presented at the very beginning, and these must then be overcome by all sorts of artifices.

Prerequisites to the proper action of the constipation diet are that the stomach is functioning well and that there are no morbid changes in the liver or bile. When there is any such trouble its nature must first be determined. How the diet must be managed, under these circumstances, and whether a regulation of the bowels by diet alone or by cathartics or enemas is possible or advisable can not be discussed here; such problems belong exclusively in the province of the physician.

That form of constipation which is associated with painful contractions, abnormal flatulence, or catarrh of the large intestine also calls for brief mention. In such instances an excess of indigestible residue will only increase the intestinal

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trouble, so we must substitute white bread for the rye or Graham bread, have the vegetables prepared in the form of purées, and omit all raw vegetables and salads; the principal insistence must be upon an abundance of fat and sugar in the diet.

A constipation diet is much less serviceable, as we have previously stated, when the fecal accumulation is in the lowest portion of the intestine. In such a case, in which also a purgative has scarcely any effect, one should not indeed refuse to employ a peristalsis-stimulating diet, but the chief reliance should be upon a stimulation or strengthening of the musculature of the lower portion of the intestine, best effected by the use of electricity.

3. The constipation diet should contain no ingredients that act in any way to restrain intestinal peristalsis. On this point some inexperienced physicians as well as patients who are inadequately instructed in dietetics commit many errors. The diet may, for example, be correctly ordered in many, perhaps in most of its

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details, yet various substances, such as sweet milk in large quantities, gruel, rice, grits, macaroni, or cocoa or chocolate pudding are allowed, or at least not strictly forbidden. In countries where prohibition does not prevail, red wine, brandy, or arrack is permitted; and in any country there is not enough of other liquids required. While successful results may be obtained in spite of this not altogether ideal diet in mild cases of short duration, yet I regard its use as quite irrational.

The patient must be as systematically instructed in regard to the injurious effects of unsuitable articles of diet as he is in regard to those which act in a curative way. Only after the intestinal functions have been acting normally for a long time can certain concessions and additions to the diet gradually and tentatively be made, but the additions must always be in restricted quantities. Even under these favorable conditions it would be altogether wrong to permit the use of foods, especially in combination, which slow

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peristalsis—for example, to allow one to drink milk and cocoa during the day and to eat rice pudding or macaroni at dinner or supper. The repeated ingestion of such a combination of harmful food might speedily upset the cure that has been attained with great difficulty and so lead to a return of the constipation in more obstinate form.

Just as we divided the peristalsis-stimulating substances into three groups, so in the following table we have placed the peristalsis-restraining foods in three groups according to the intensity of their action—I, II, III indicating the strongly, the moderately, and the slightly constipating articles respectively:

ARTICLES OF DIET WHICH SLOW PERISTALSIS

Bread:

- White Bread II
- Zwieback II
- Cake II
- Cookies (except fruit cookies and gingerbread) II

Cereals:

- Rice I
- Grits I
- Macaroni I
- Noodles I
- Oatmeal and other similar articles I
- Farinaceous Foods I

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ARTICLES OF DIET WHICH SLOW PERISTALSIS—*Continued*

Eggs: II

Egg dishes prepared with butter or lard III

Hard boiled eggs I

Meat and Fish:

Fat varieties III

Lean varieties II-III

Milk Products:

Sweet milk of every kind II

Cottage cheese II

Cream cheese III

Cocoa and chocolate and products prepared from them: I

Fat-containing chocolates II

Fruit:

Bilberries, huckleberries I

Pears II

Tart apples II

Alcoholic Beverages:

Red Wine I

Brandy I

Arrack I

Whisky I

Sweet wines II

Tobacco (in excess) II

4. The constipation diet, as indeed any other rational diet, must show a sufficient vitamin content. At the present time the greatest insistence is made, and rightly so, on this point. The doctrine of vitamins was first promulgated by English and American investigators, among the latter by Osborne and Mendel especially, and it has also been more recently intensively studied in Germany. Of special importance is the so-called fat soluble

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vitamin, which is also called vitamin A. When this is absent, children as well as adults, and also experimental animals, suffer from scurvy. If there is merely an insufficient quantity of it in the diet, the growth of children is retarded in the same way as it is by a want of the essential building materials.

Vitamin A is abundantly present in all green leaves, therefore in salads that are eaten raw, in vegetables that are not cooked too long, in oranges, and especially in the fat and the milk fats of grazing animals,—cow's milk, cream, butter, and cheese. Smaller amounts of vitamin are also found in bread containing bran, beef, unsprouted potatoes, and fresh fruit. On the other hand, it is absent from all preserves, from pork and lard, and also from fine wheat flour. Cod-liver oil and fish oils in general are rich in vitamins, as is also the body fat of beeves, tho the bed fat is very poor in this substance. Of the vegetable oils, linseed-oil is extremely poor in vitamin A, and olive-oil and rape-seed oil contain

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it in small amounts; cocoanut-oil and the cocoa butter derived from it are also very poor in vitamin A, while the so-called oleomargarine obtained from animal margarine contains a fair amount, tho considerably less than does natural butter. The seeds of plants, with the exception of millet, hemp, and cotton, contain an insufficient amount. Oats are especially poor in vitamin A, and the same is true of maize, rice, barley, whole wheat, etc., and also the wheat germ. On the other hand some of the legumes, especially the soy-bean, contain a sufficient amount. Bananas have too little vitamin and so have potatoes. Lemons are very rich in vitamins, and that is the reason why they have, for years, ranked so high as an antiscorbutic remedy. They are surpassed in this respect only by oranges.

In general the constipation diet, if it includes salads, egg-dishes, vegetables, milk, butter, cream, and cheese, will meet every requirement of vitamin content. When, however, as is the case in Germany

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in winter, there is a scarcity of fresh vegetables, salads, and fruits, one should add a small quantity of lemon juice to the diet as a measure of safety.

CHAPTER IV

DIETETIC TREATMENT AT VARIOUS AGE PERIODS

FUNDAMENTALLY, the constipation diet does not vary at the age periods; the modifications being at most only slight. In childhood the diet must be one promotive of growth, and for this purpose milk in its different forms is indispensable. But, as we have already stated, cow's milk and the milk of various other animals also belong to the group of peristalsis-restraining foods. Sour milk, buttermilk, kumyss, yoghoort, zoolak, and similar preparations are often not relished by children; also they are not always suitable to the digestive organs of the young. In order, therefore, to remove the peristalsis-restraining properties of milk it is well to add milk-sugar to it regularly.

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Milk-sugar is the best natural laxative. In this respect it surpasses considerably the other dietetic laxatives, such as fruit, jams, and honey. It may be added not only to milk and porridges but also to stewed fruit, jam, fruit soups and cottage cheese. As milk-sugar is only slightly saccharine, it can be added when indicated to ordinary cane-sugar. The dose of milk-sugar varies according to the age of the patient. Children may take a teaspoonful three times a day, adults a tablespoonful at the same intervals. If the result is good but not entirely satisfactory, the dose may be increased, the required amount being determined by experiment. By means of an adequate addition of milk-sugar alone one can often influence favorably a not too obstinate constipation in children. Nevertheless it will be well not to rely upon this alone, but to add to the diet a number of the other excitors of peristalsis noted in the preceding chapter.

In adult life, that is to say between the twentieth and fiftieth years, various items are of practical importance in the dietetic

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treatment of constipation. Of especial importance are the duration of the trouble and the abuse of cathartics. The further back the constipation dates the stronger the purgatives taken, and the less marked their effect, the more energetic must the attack be. In addition to the diet, I generally recommend that the patients take half a teaspoonful of table salt in a glass of water the first thing in the morning and the last thing at night. In these cases also the laxative articles of diet must be of the highest potency (1) and combined with skill. One should never forget to add milk-sugar in large doses to the tea or coffee or stewed fruit.

The treatment should differ according as the patient is well or poorly nourished. To the former it is not advisable to give fats in too large quantities, notwithstanding their great value in overcoming constipation. Girls and young women, especially, are bitterly resentful if the scales show a too rapid increase of weight, and sometimes never forgive the physician because of it. This trouble can be readily

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corrected by directing the patients to put themselves one day in the week on a diet which I have called the "abstinence diet." On this day the patient takes only dry bread and, perhaps, black coffee or tea with lemon and milk-sugar at two meals, with a fair helping of vegetables, salads, and fruit. This abstinence diet as a rule brings about a reduction of weight of about a pound a week, so that a more or less frequent repetition of the abstinence day will almost or wholly obviate the danger of increase in weight.

When we have to do, on the other hand, with weak and emaciated individuals suffering from constipation, we must lay particular stress in their treatment on what I have called the super-fat diet, *i.e.*, on a systematic addition of fat to the diet without, however, neglecting the other details of the treatment. This super-fat cure is also suitable, as has been previously stated, in those cases of constipation in which there is a discharge of abnormally hard, short, cylindrical fecal masses and in which also painful con-

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tractions, a sense of pressure, and distention of the abdomen occupy a prominent place in the disease picture. The diet mentioned is well adapted to patients who suffer from this form of constipation and who are also thin and bloodless. It is also the best method to employ when there is an occasional discharge of cylindrical masses of mucus. The fats should be given in the form of cream, of butter alone, or spread thickly on bread, or added abundantly to vegetables and potatoes; or in the form of oily mayonnaise dressing and sardines or other fish preserved in oil. In these cases also the scales furnish the best criterion of the efficacy of the treatment. The physician should not be satisfied with this treatment until a progressive increase in weight is evident together with the restoration of the bowel function. When the normal weight is attained the extra amount of fat should be cautiously reduced, but the rest of the treatment must be maintained for a long time.

Quite different must be the diet in old

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age. At an advanced period of life the treatment of habitual constipation is usually surrounded with many difficulties. The aged are seldom able or willing to take sufficient exercise—of athletic exercises of course we do not speak—and the appetite and the capacity for taking nourishment are unfavorably influenced by this lack of exercise. Often also the powers of mastication leave much to be desired. Furthermore, we must take into consideration the fact that the intestinal tract, like all the other organs, loses its elasticity and tone with advance of years. It is also very difficult to change the habits of life and of eating and to overthrow the firmly rooted fancies and prejudices of the aged. We may sometimes perhaps succeed, but we may well ask ourselves whether it is really worth while, as the saying is, to pour new wine into old bottles, and to seek to force results under conditions which bear no relation to the nature of the disease. In the case of patients on the other side of sixty

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who have been using cathartics all their lives, not only do I not take such remedies away from them, but if those in former use have lost their efficacy, I even recommend a change to some other one. I need not add that the mildest and least irritating remedies which will produce results should be selected in such cases, and if the cathartic does not act satisfactorily it may be supplemented or replaced by enemas. In the treatment of aged patients we should dispense with many otherwise effective supplementary measures, such as massage, electricity, hydrotherapy, and gymnastic exercises; one can not promise any really beneficial results from the use of these agents in the case of the aged, and the patients themselves often look upon them as a wholly unnecessary nuisance. However, we must not leave out of consideration the fact which is, of course, generally recognized, that the tale of years is no measure of senility. And it may be, therefore, that we can treat some patients, in spite of the great

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number of their years, in the same way and according to the same principles that we have discussed as appropriate to persons in middle life.

CHAPTER V

DIET FOR CONSTIPATION DURING PREGNANCY

SOLICITUDE for the life of mother and child during pregnancy justifies, at times, relegating the question of the condition of the bowels to the background. This question is not a matter of indifference, however, and calls for a brief discussion. In the first place, it is of moment to determine whether the constipation was present previously and became accentuated under the changed condition, or whether the trouble first declared itself with the beginning of pregnancy. In both cases we have to consider how the digestive apparatus is functioning, and this, as is well known, may vary greatly.

There are many women, especially those with strong nerves and good constitutions, in whom pregnancy may be

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entirely passed without any signs of digestive troubles. With these, the regulation of the bowels is naturally an easy matter. If we are dealing with a previously existing constipation and everything else is favorable, we can continue the former diet in all its details; or, in case the constipation has only recently begun, we can put into force the diet already described. If we are dealing with only a casual constipation nothing is called for other than the temporary administration of a mild laxative or of enemas.

The problem is more difficult when there are complications, such as severe nausea or frequent vomiting, loss of appetite, sleeplessness, exhaustion or general physical depression, or a marked neurasthenic condition. When constipation is added to these symptoms it is not the time to attempt a regulation of the intestinal function by the forcible imposition of a prescribed diet. The main problem then is to tempt the woman to eat by means of a strengthening but artfully composed

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diet to which one naturally would and should add a few nourishing and palatable articles that will favor bowel movements. But this should be done with circumspection and with great regard to the condition of the patient. The bowel movement may best be obtained by means of mild laxatives. It is possible also that in the latter half of pregnancy all these complicating digestive disturbances will disappear of themselves or at least be greatly mitigated, and then we may try again to institute a properly devised diet.

CHAPTER VI

DIET IN DISEASES OF THE UPPER DIGESTIVE TRACT

CARRYING out a constipation diet is quite easy of accomplishment, as we have seen, when the bowel trouble exists alone, the other organs, especially the stomach, functioning normally. But when in addition to the constipation there are disorders of the upper part of the digestive tract, the constipation diet must be modified in certain essential particulars. It would be foolish, for example, to prescribe a diet containing much indigestible residue, such as described in Chapter III of this section, in cases of gastric or duodenal ulcer, dilatation of the stomach, gastric catarrh, or constriction of the pylorus. Certain articles of the diet such as easily absorbed fats, especially cream, a good olive- or almond-oil,

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and perhaps also sour milk, buttermilk, and yoghoort, may be useful even tho they do not wholly cure the constipation. It is often possible to put those patients on a lacto-vegetarian diet, the several articles of which, however, are to be chosen with the greatest care. Vegetables and potatoes should be allowed only in the form of purées; raw fruit should be replaced by compote, and instead of coarse bread, bread and rolls made of fine flour only should be allowed.

It is often inadvisable to insist obstinately upon a dietetic treatment of inveterate constipation in patients with gastric trouble. We must in such cases be content to resort first to the mildest laxatives, and only after the cure of the stomach trouble should we make the attempt to restrict their use more and more, finally abandoning them altogether. What laxatives we should use in such a case is a matter for the physician to determine. The treatment of habitual constipation with enemas also belongs to the domain of medicine.

CHAPTER VII

DIET IN CHRONIC CATARRH OF THE COLON

AS SOON as a catarrh of the colon has developed as a result of habitual constipation, the diet must be attended to with scrupulous care, and therein especial weight must be given to the cause and duration of the catarrh. If the case is one of colitis excited by the use of drastic purgatives or of strongly irritating enemas, it will be well to abstain at first from a diet rich in cellulose and to depend upon an abundance of fat and sugar, given as indicated in a previous chapter, to start up the sluggish peristalsis. The progress made under this regimen can be controlled by a careful examination of the feces. If we fail to compass our end by diet alone we may get additional help from the use of olive-oil of the best qual-

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ity or of mineral-oil (see Chap. XVI, Part II). When the discharges are seen to be free from mucus we can add coarser articles to the diet very gradually until normal intestinal activity is secured.

Medicinal cathartics should under no circumstances be given in cases of chronic intestinal catarrh. If the disease is located in the lowest portion of the intestine, injections of olive-oil or mineral-oil only may be given. In addition to these dietary prescriptions warm applications in various forms often afford relief to the painful colic. I need not emphasize that the successful treatment of chronic intestinal catarrhs, especially those of long duration, is possible only under skilful medical supervision.

CHAPTER VIII

DIET IN NEURASTHENIA

FOR neurasthenics the best diet is a vegetarian one, with, of course, a plentiful addition of fats, milk foods, and eggs. It is only in the rare cases of obesity and neurasthenia combined that the fats must be restricted. As for the rest, one must be careful not to weaken the intestinal canal of a nervous person.

A rough coarse diet, largely made up of indigestible residue, especially in connection with suitable exercises, often works wonders. On the other hand, neurasthenics living on a soft, easily digested slop diet feel wretched, and intestinal troubles become the order of the day for them. I have previously stated that thin, restless, over-worked neurasthenics should be put to bed for a time, during which period the diet need differ

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scarcely at all from the above prescription.

It is self-evident that relief from chronic constipation alone should not be the sole object in the treatment of neurasthenia. There are many neurasthenics who, despite the regulation of their bowels, still complain of anxious feelings, irritability, sleeplessness, a feeling of fulness in the head, and distress in the stomach and intestines. But there are also other neurasthenics whose complaints are so centered on the intestinal canal that, when these bowel troubles are relieved by means of a suitable diet, a great step is taken toward relieving other distressing symptoms at the same time. As soon as this object is attained, it is possible then to begin to modify the constipation diet in individual cases by allowing two meat or fish days in the week, but in the main it is advisable to adhere to the principle of a vegetarian diet for a long time. It need not be emphasized that neurasthenics must scrupulously avoid the excessive use of alcohol or tobacco.

CHAPTER IX

DIET IN CONSTIPATION COM- PLICATING DISEASES OF METABOLISM

DISEASES of metabolism complicated with constipation, require a varying diet according to the nature of the case, as in the affections just considered. If, for example, we have to do with well-marked obesity, all the nutritive material (protein, fats, and carbohydrates) must be greatly restricted, especially the fats. That means, of course, that success in the regulation of the bowels will present great difficulties. Experience has taught me, however, that we can overcome these difficulties by means of a diet containing much indigestible residue, such as rye or Graham bread, vegetables containing much cellulose and little nutritive material—cabbage, for example—and fi-

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nally, an abundance of fruit. Contrary to general belief we may give to fat persons three or four potatoes a day, either peeled, with the addition of salt or meat extract, or "in their jackets." Of course, potatoes cooked with fat, such as fried or creamed potatoes, must be strictly forbidden. Very suitable for our purpose is the use of buttermilk, or sour milk which has been freed from fat in a separator. Also in these cases a mildly laxative fruit wine, such as cider, gooseberry wine, currant wine, etc., is to be recommended. When the object is the relief of both constipation and obesity at the same time we can obtain a very satisfactory reduction in weight by the interposition of one or more "abstinence days" a week, as described in Chapter IV of this section.

In diabetes, to prescribe a diet that will restrict sugar production on the one hand, and relieve constipation on the other is sometimes a difficult undertaking. In dealing with an advanced case of diabetes the necessity of systematically controlling

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the sugar formation so outweighs all other indications that relief from constipation must be relegated to the background. But in a mild case of diabetes, when the patient is already acquainted with the principles of diabetic treatment, he can be instructed in the fundamentals of bowel regulation as well. A careful distinction must be drawn between the stout and the thin diabetics. With the former the principle previously discussed will apply, tho it goes without saying that milk-sugar, potatoes, fruit, except tart apples, and compote, unless the latter is prepared without sugar, must be excluded. The forbidden fruit in these cases can be replaced by nuts, almonds, or bananas, which are almost wholly sugar free. It is true that nuts have a rather high fat content but, in view of the small amount in which they are eaten, this fact need hardly enter into consideration, even in the case of stout diabetics. The chief accessory for the regulation of the intestinal functions in diabetics of spare build is oil. I shall enter more fully into

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the oil treatment of chronic constipation in a later chapter and will here speak only of the use of mayonnaise as a substitute for pure oil. In this preparation the fat is usually eaten with relish and is promptly digested; and, of course, it can be employed with all sorts of meat and fish dishes. In conformity with the principles that I have repeatedly emphasized, one should not rely upon a single factor even in this instance, but should combine it with others, so long as the latter are not such as would favor sugar formation. One variety of sugar—mannite—is satisfactory in some cases of mild diabetes, tho not in all. When it is used, however, its effect on the excretion of sugar should be carefully watched.

The vegetarian diet is especially suitable when we are dealing with a combination of gout and constipation. Of course in these cases it is permissible to include sour milk and other similar milk products, cheese (tho the highly flavored cheeses are forbidden), and eggs with butter or bacon. Fruits of every kind and

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in any quantity are allowed, but all pungent and spicy articles must be forbidden. When the gout is complicated with an abnormal stoutness, the rules given in the section on the treatment of obesity must be observed. After regulation of the bowels has been achieved, the patient may be allowed first one, and then two fish and meat days a week, but the patient must be cautioned against over-indulgence. Sweetbread, calves' brains, and liver, since they increase the production of uric acid, are especially harmful. Alcoholic beverages, especially if used habitually, are unfavorable to the gouty, as every one knows.

A few remarks may be made here concerning the treatment of constipation when associated with paralysis of the extremities. In such cases, whatever the cause may be, its effect upon the intestinal functions is bad. The patient sits in a wheel chair or lies in bed or on the sofa, usually has a good appetite and grows progressively stouter, the intestines alone going on strike. Here we must institute

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a constipation diet such as that described for the obese, and if this has little or no effect it must be supplemented by some mild laxative. We can never foresee how the laxative will work and we shall do well, therefore, to reserve the more strongly acting drugs for any possible future need. We should be cautious in the selection of the laxative and also in regard to the dose prescribed. Massage and electricity may also be of service in these cases.

SAMPLE DIETS IN THE TREATMENT OF CONSTIPATION AT DIFFERENT AGE-PERIODS AND WITH VARIOUS COMPLICATIONS.

1. *In Childhood.*

Morning:

Tea with milk, One teaspoonful of Milk-sugar, Wheaten, Oatmeal, Graham Bread, Butter, Honey, Jam.

Noon:

An Egg dish with Vegetables and Salad or Sour Milk, Compote, Fruit, Water containing Fruit Juices.

Afternoon:

Tea with Milk, One teaspoonful of Milk-sugar, Fruit Cookies, Graham Bread with Jam, Bran Biscuit, Oatmeal Crackers.

Evening:

Vegetable Soup, Green Vegetables (no Cabbage), Fresh Salads with Lemon Juice and Oil Dressing, Potatoes, Eggs, or Farinaceous Puddings with Cooked Fruit. Twice a week Lean Meat or Fish, Fruit, Lemonade, Fruit Juices.

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2. *At Puberty.*

Morning:

Tea or Coffee with Milk, One dessert-spoonful of Milk-sugar, Graham Bread, Rye Bread, Butter, Honey, Jam, Fruit.

Noon:

Egg Dishes, Vegetables and Salads of every kind, Rye Bread, Butter, Cheese, Fruit, Cider.

Afternoon:

Coffee with Milk and Cream, One dessert-spoonful of Milk-sugar, Graham Bread, Rye Bread, Butter, Honey or Fruit Cookies.

Evening:

Thick Vegetable Soups, Vegetables and Salads, Potatoes in various forms, Fat Fish or Meat twice a week, Compote, Fruit, Fruit Juices.

3. *In Adults.*

Morning:

A glass of Sweetened Water or Salt Water on rising. An hour later: Coffee with Milk, one dessert-spoonful of Milk-sugar, Rye Bread, Butter, Jam, Eggs with Butter and Bacon, Fruit.

Noon:

Vegetables and Salads, Rye Bread, Butter, Cheese, Fruit, Fruit Juices.

Afternoon:

One dessert-spoonful of Milk-sugar in a cup of water, or Fresh Fruit if desired.

Evening:

Fruit Soup or Potato Soup, Vegetable Soup, Vegetables and Salads, Potatoes in various forms, twice a week Fat Meat or Fish, Rye Bread, Butter, Tea, Fruit, Cider.

4. *In Anemia.*

Morning:

One glass of Cold Boiled Milk, one dessert-spoonful of Milk-sugar on rising. An hour later: Tea with much Milk, White Bread and Graham Bread, Butter, Jam, Egg Dishes, Fruit.

At 11 o'clock: Buttermilk, Fermillac, Zoolak, or Bulgarian Milk.

Noon:

Eggs with Bacon, Green Vegetables, Graham Bread,

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Butter, Cream Cheese, Compote, Fruit, 1 glass of Milk.

Afternoon:

Tea with much Milk, a dessert-spoonful of Milk-sugar, White Bread, Graham Bread, Butter.

Evening:

Green Vegetables, Salad with Sour Milk or a Lemon Juice and Oil Dressing, Meat or Fish, Compote, Fruit, Tea with much Milk and Milk-sugar.

5. *In Emaciation.*

Morning:

On rising: Two dessert-spoonfuls of Olive-Oil with Lemon Juice or two-thirds of an ounce of Butter (20 grams) and one glass of Water.

One hour later: Tea or Coffee with Cream, a dessert-spoonful of Milk-sugar, Graham Bread, Butter, Eggs with Bacon.

Noon:

Vegetables, Potatoes cooked with Fat Meat (with plenty of Butter added), Salad with Lemon Juice and Oil Dressing, Cream Cheese, Fruit.

Afternoon:*

Tea or Coffee with Cream, one dessert-spoonful of Milk-sugar, Graham Bread, White Bread, Rye Bread, much Butter.

Evening:

An hors d'œuvre of Sardines or other Fish preserved in Oil, Soup with Marrow, Baked Potatoes, Vegetables with much Butter, Salad with Lemon Juice and Oil Dressing, Graham Bread, Rye Bread, Butter, Cream Cheese, Compote, Fruit.

Before going to bed: Two-thirds of an ounce of Butter and a glass of Water.

6. *In Spastic Complications or Colitis.*

Morning:

Tea or Coffee with Cream, one dessert-spoonful of Milk-sugar, White Bread, Butter, Honey, Egg dishes with Bacon or Butter.

Noon:

Egg dishes with Butter or Bacon, Vegetables, Mashed

* Rest in bed between 2 and 4 o'clock.

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Potatoes, very sweet Compote, Lemonade or Fruit Juices.

Evening:

Hors d'œuvre of Sardines or other Fish preserved in Oil, Vegetable or Fruit Soup, Vegetables, Mashed Potatoes, Lean Meat or Fish, White Bread, Butter, Cottage Cheese with Cream, Compote with Milk and Milk-sugar, Lemonade.

7. *In Diseases of the Upper Digestive Tract.*

Morning:

A glass of Water with Sugar or Salt on rising.* An hour later: Tea with Milk or Cream, one dessert-spoonful of Milk-sugar, Toast, Butter, Honey, one Egg. Two hours later: Sour Milk or Buttermilk.

Noon:

Egg Dishes with Butter or Cream, Mashed Potatoes, Purée of Vegetables, Sweet Compote, White Meat or Fish, Mineral Water or Lemonade.

Afternoon:

If desired, Tea with Milk or Cream, a dessert-spoonful of Milk-sugar, Zwieback, Toast, Butter, Jam.

Evening:

Vegetables, Mashed Potatoes, Fresh Water Fish, White Bread, Butter, Compote, Tea with Milk, one dessert-spoonful of Milk-sugar, Mineral Water.

8. *In Neurasthenia.*

Morning:

Postum with Milk or Cream, Porridge with plenty of Milk-sugar, Butter, Eggs, Rye Bread, Jam, Fruit.

Noon:

Eggs and Bacon, Vegetables, Salad, Potatoes, Fruit, Fruit Juice.

Afternoon:

Postum with Cream, one dessert-spoonful of Milk-sugar, Fruit Cookies, Rye Bread with Jam.

Evening:

Sour Milk and Cream, Vegetables, Salad, Rye Bread,

* When the secretion of hydrochloric acid in the stomach is excessive my custom is to recommend sugar water; when the acid secretion is diminished, salt water.

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Graham Bread, Butter, Cheese, Fruit, Lemonade, Fruit Juices.

9. *In Obesity.*

Morning:

On rising: One glass of Salt Water, fasting. An hour later: Tea with Lemon or Black Coffee, one dessert-spoonful of Milk-sugar, Graham Bread, Jam.

Noon:

Vegetables with Meat Extract but without Fat, Salad with Lemon Juice and Oil Dressing, two or three Potatoes in their jackets without Butter, Compote, Fruit, Fruit Juice.

Afternoon:

Tea with Lemon, one dessert-spoonful of Milk-sugar.

Evening:

Vegetables,* Potatoes, Salad with Lemon Juice, Lean Meat or Fish with Sauce, Compote, Fruit, Lemonade, Fruit Juice.

10. *In a Mild Case of Diabetes without Obesity.*

Morning:

On rising: One glass of Salt Water or two-thirds of an ounce of Butter. One hour later: Tea or Coffee with Cream and Saccharin or Crystallose, two-thirds of an ounce of Graham Bread, much Butter, Eggs with Mayonnaise Dressing or Scrambled Eggs with Bacon.

Noon:

Eight ounces (200 grams) of Vegetables,* Head Lettuce or Tomato Salad with Lemon Juice and Oil Dressing, Stewed Fruit without Sugar, Radishes, Cream Cheese, one tart Apple, unfermented Cider or Lemonade.

Afternoon:

Coffee or Tea with Cream and Saccharin or Crystallose.

Evening:

Hors d'œuvre of Herring, Sardines or other Fish preserved in Oil, Bouillon with Marrow, four ounces (100 grams) of Vegetables, Salad with Lemon Juice.

* Spinach, Kidney Beans, Cauliflower, Asparagus, Artichoke, Kohlrabi, etc.

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and Oil Dressing, Fat Meat or Fish, two-thirds of an ounce (20 grams) of Graham Bread, Cheese, Butter, a tart Apple, Cider or Lemonade or Mineral Water.

The menus presented above are not hard and fast dietetic formulas; they are given as examples only, and changes in them are not only permissible but necessary according to the condition of the patient and the degree of constipation. A comparison of these individual dietary formulas shows that, while there is a close resemblance between them, there are all sorts of differences in the details. But it is precisely on these differences that success or failure rests, for they determine the results of the treatment.

CHAPTER X

THE GRAPE-CURE

WE HAVE already seen that the different fruits are of great value as accessories of a rational diet. Grapes, however, are much more effectively employed in the form of a special treatment. The grapes can be eaten either in the vineyard or in one's own home, so long as their quality is satisfactory. In Europe, the best known grape-cure resorts are located in Germany, in the Italian Tyrol, and in the western part of Switzerland.

In former times the carrying out of a grape-cure called for the consumption of a large quantity of grapes, even up to eight or nine pounds a day. At the present time smaller quantities are used. From four and one-half to five pounds may be regarded as the normal dose, taken at the following intervals:

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On rising, 1 lb. (500 grams)

Between 10 and 11 a.m., 1 lb. (500 grams)

At 6 p.m., 2 lb. (1,000 grams)

Before retiring, 1 lb. (500 grams)

This distribution may be varied both as to time and as to quantity.

The treatment can be carried out either by eating the grapes or by drinking grape juice, the latter being taken with mineral water. Each of these methods has its advantages and disadvantages. Grape juice is naturally easier to take and is also certainly more easily digested than the whole grape. For even when one rejects the skins, some particles are often left in the mouth and swallowed, and this is not a matter of indifference when the digestive powers are enfeebled. Frequently an irritation or inflammation of the gums, lips, and tongue occurs when large quantities of grapes are eaten. Probably this is due to the action of the tartaric acid in the grapes, and perhaps also to neglect in washing the grapes or to a lack of care of the vines. And in addition it may be noted that the consumption of large quantities of grapes carried out according to

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prescription puts a tax on the masticatory apparatus. On the other hand it must be remembered that in pressing out the grape juice, even when considerable pressure is exerted, some twenty per cent. of the nutritive material is wasted. Taking all these items into consideration it seems more advisable to consume half of the prescription in natural form, the other half as grape juice.

As regards the quality of the grapes, only those which are thin-skinned, juicy, and full of sugar should be used. Such grapes will average:

Sugar	17.5%
Nitrogenous matter	0.5%
Acids (chiefly tartaric)	0.6%
Mineral matter	0.4%

In two kilograms (4.4 pounds) of grapes, the edible portion (excluding all waste material) contains:

Grape sugar	10	oz. (315 grams)
Nitrogenous matter	1/4	oz. (9 grams)
Tartaric acid	1/3	oz. (11 grams)
Mineral matter	103	grains (7 grams)

This gives a caloric value of 1,350, that is to say about one half of the requirement for an adult at moderate labor.

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The chief ingredient of the grapes is sugar, and therefore a diet of grapes alone would induce protein starvation. For this reason the grape-cure should be supplemented by a sufficient quantity of albuminous material.

Not every kind of food goes well with the grape-cure. Among those more or less incompatible with it are sweet milk, cream, sour milk, and all fermented milk products. The same is true of many green vegetables and salads. Vinegar and lemon juice also do not act well with the grape-cure. On the other hand the following are usually satisfactory: All albuminous substances such as eggs, tender meat and fish, the various cheeses, rice, bread stuffs, cereals, leguminous soups, boiled potatoes, butter, sardines, and, of course, almost all fruit. A suitable constipation diet can be easily constructed from a skilful combination of these articles. It should be said that the grapes as such are markedly stimulating to intestinal peristalsis and therefore less care need be taken to avoid the peristalsis-

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restraining articles listed in Chapter III of this section.

In instituting the grape-cure one should not begin with the full prescription of grapes, but first try half the amount and gradually increase it. The reaction of the gastro-intestinal canal will be the guide here, for it has been generally observed that the system becomes adapted in short order to a gradually increasing quantity of the juice.

A troublesome altho frequent complication of the grape-cure is the occurrence of an abnormal production of gas in the stomach and intestines. According to the experience of von Noorden, which I can confirm, gas accumulates in two distinct forms, the early and the late, or perhaps more clearly expressed as wind in the stomach and as gas in the intestine. The first is probably the result of swallowing the grapes too rapidly, for it usually appears soon after they have been eaten. On the other hand, gas does not accumulate in the intestine until several hours after the grapes have been eaten. This gas

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formation, which may be quite painful, is encountered after the drinking of grape juice as well as after the eating of grapes. Probably it is caused by impurities mixed with the grapes, perhaps due to improper care of the vines. But it might also be due to the flooding of the intestinal canal with a great and unaccustomed quantity of sugar. In the course of the cure the bowels may learn to overcome this difficulty, but sometimes the gas trouble may reach such a point that the grape-cure must be given up or greatly curtailed.*

The action of the grape-cure varies greatly according to the degree of the constipation. In the milder cases success is promptly obtained, but in very chronic cases the result often leaves much to be desired, and necessitates a recourse to other remedial measures, preferably dietetic or even medicinal ones at times. It has been the occasional experience of some physicians to observe a halt in the course of the grape-cure soon after the

*The treatment of this condition is taken up in Chapter IV, Part III.

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initial improvement in the bowel action. This is thought to be due to the action of the tannin that is contained to a quite considerable amount in the skins of the grapes. On the other hand the skins and seeds may exert a favorable action on the intestine by reason of their large content of cellulose. In my opinion the explanation of the occasional blunting effect of the grape-cure is that the intestinal canal rapidly becomes accustomed to the excess of sugar. For that reason I combine the constipation diet with the grape-cure, and insist upon this the more strictly the longer has been the duration of the constipation. In most of the grape-cure resorts, massage, electrical treatment, and hydrotherapy are combined with the cure.

One great advantage of the grape-cure is that it can be readily given as a fattening treatment. The high sugar content of the grapes is in itself a fattening agent of the first rank, and when we add to the grape-cure a fatty diet (not neglecting the proteins, however), we can help the slen-

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der patient to put on weight and at the same time treat him for constipation.

The question arises as to the permanence of a grape-cure. I am compelled to doubt it. The condition here is very similar to that in the spa treatment and all other forms of purgation therapy. The effect disappears soon after the conclusion of the treatment. If one understands how to continue the action once established and to assure its permanence by means of other dietary measures, the treatment of constipation by the grape-cure may be pleasantly and effectually started, altho success is not guaranteed.

CHAPTER XI

PSYCHIC AND HYPNOTIC TREATMENT

WITHOUT question mental influence is an important factor in the treatment of chronic constipation. But the mistake should not be made of supposing that all cases without exception or that even the majority of cases can be included under such a statement. In fact, psychotherapy has less effect upon the intestines than upon the body as a whole. The cases in which the physician is successful with psychotherapy or mental suggestion are, for the most part, those in which the patient suffers from constipation because the entire digestive apparatus is disordered in consequence of a disturbed mental equilibrium, not because the intestine alone does not function. When a patient suffers from loss of appetite, insomnia,

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pressure in the head, and has no inclination to work, and even less to exercise or take part in athletic sports, simply because he is nervous and out of sorts, it is no wonder that constipation is included among the other distressing symptoms.

The trouble frequently begins with a sense of fulness or pain in the stomach, flatulence, and a feeling of distention in the abdomen. What is more natural than to diagnose this as a chronic gastric trouble, a catarrh or an ulcer of the stomach, and to prescribe a strict diet therefor? If that does not help, the diet is still further restricted until the patient is finally reduced to tea and milk stews. It can be easily imagined that the patient has been getting worse and worse all the time. Only a physician gifted with a clear insight into psychic troubles as well as those of the body will direct his treatment toward the source of the trouble, that is, the mental depression. If he succeeds in removing this, in heartening the patient and raising his spirit anew, then the problem of curing the bowel trouble

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is practically solved. To complete the cure it is only necessary to send the patient that very evening, in the company of a trusted friend, to a good restaurant for a tempting meal. Then, if the meal is digested without difficulty, as is often the case, the way is open for a thorough regulation of the intestinal functions. Regardless of the stomach we begin, then, with a nourishing diet, and the patient, to his utter astonishment, finds that his bowels are beginning to act normally. Should some slight trouble persist for a while it can be overcome without difficulty by means of the dietetic measures that have already been considered.

Strongly as I recommend a psychic or suggestive treatment in these cases of apparently organic gastric or intestinal trouble, I can not, however, speak favorably of hypnotic treatment. I am well aware that striking results from the use of hypnotism have been reported by hypnotists of high scientific reputation, for example, by the Swiss physicians Forel and Dubois, and while I do not doubt the

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correctness of these reports, I can not regard such assaults on the psychic apparatus as harmless. One should undertake procedures of this kind with the utmost caution, and never resort to them when results can be obtained with the simpler and less dangerous verbal suggestion. It is my belief that the hypnotic treatment of constipation, which enjoyed a certain repute toward the close of the last century, has to-day but few adherents.

And when we come to deal with constipation of an organic nature we can hardly promise any results from psychotherapy. It is indeed true that in the course of time all sorts of neurasthenic symptoms may be added to those of habitual constipation, but then the former are at most consequential or complicating symptoms of the main trouble, and will disappear as soon as that is cured.

CHAPTER XII

MINERAL - WATER OR SPA TREATMENT

MINERAL-WATER cures have played a prominent rôle in the treatment of chronic constipation for centuries and have enjoyed great repute among people of all classes. The waters that are highly prized are those that contain sodium sulfate or sodium chlorid and, perhaps, iron, and flowing from hot or cold springs. Some of the resorts celebrated for such springs are further renowned for their excellent mud baths. Others are regarded as possessing great healing powers in chronic rheumatic affections. However, we shall speak only of the action of the saline and sodium sulfate waters in the treatment of intestinal sluggishness, habitual constipation, and intestinal catarrh.

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That these waters possess a peristaltic stimulating action, the sodium sulfate waters more than the saline, has been established in thousands of cases. We have previously observed that the use of table salt dissolved in cold water is an important accessory of the constipation diet, so it is natural that the drinking of these saline waters frequently during the day must add to the cathartic effect. The question arises, however, whether the result of the drinking of these waters for weeks will be temporary or lasting; and, further, whether it will be successful in light cases only or in the inveterate ones as well. As regards this latter point my experience is that both the saline and the sodium sulfate waters are efficacious only in the milder forms of constipation and not in the inveterate ones unless the organism is literally flooded with enormous quantities of fluid. When, for example, the bowels can be moved only by the use of drastic purgatives, the hope to regulate the intestinal functions by means

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of saline or sodium sulfate waters is illusory.

As regards the permanence of the cure the testimony of the patients themselves is not unanimous. In favorable cases the results obtained from a four to six weeks' spa treatment last on an average from six to twelve months, in many cases only three months, and in not a few the effect of the mineral water ceases almost immediately upon the termination of the treatment. We can not foresee, then, what will be the effect of the spa treatment on the individual patient. Naturally those among the sufferers who derive benefit from the cure will revisit their favorite resort every year. I have known patients who prided themselves on visiting the same spa every year for a quarter of a century, but I fail to find in this fact any special recommendation for that resort. But even those who are less satisfied with the results stick to the same resort because, for the few weeks that they are there, at least, they are relieved of their bowel discomfort. Other attractions are the pleas-

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ant climate, the invigorating baths, the freedom from daily drudgery at their usual avocation, the opportunity for abundant exercise, and, last but not least, the meeting with old friends and acquaintances with whom they can have an evening at cards.

In my opinion the influence of the saline and sodium sulfate waters on intestinal peristalsis is very similar to that of a mild laxative. The spa physician, as well as the patient, who is familiar with the constipation diet can markedly increase the effect of the waters and of the other therapeutic measures by an adherence to a suitable diet. I think it very likely, in fact, that the permanent benefit, that is without doubt occasionally obtained, is to be attributed more to the latter than to the action of the waters. In a number of the resorts are to be found excellently managed sanatoriums, and I regard these as very desirable for patients with advanced constipation complicated with nutritive and metabolic disorders, for it is seldom possible to obtain special

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dietetic prescriptions properly prepared and served at the ordinary hotel.

The question as to the value and prospects of cure from the spa treatment in constipation is not easy to answer in the individual case, as we have seen. But the patient is doomed to disappointment who expects a definite cure of an obstinate disease of years' duration by a four weeks' course of treatment at some resort. Possibly, however, a course of saline or sodium sulfate waters is beneficial to this extent, that its failure to effect a cure finally persuades the patient that a lasting result can be obtained only by a conscientious observance of a rational diet aided, perhaps, by other accessory measures.

These remarks on mineral water cures apply, as should be specially emphasized, only to those morbid conditions in which the constipation is the chief or sole complaint. In cases in which not only the intestinal function is disordered but some other disease is present as well, considerations of a different sort regarding the therapeutic use of mineral spring waters

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would be appropriate, and despite the poor outlook for the cure of the constipation, a course of treatment at one or another spa may hold out a promise of general relief. The decision as to the method of treatment in such cases and also the choice of the resort must rest in the hands of an experienced physician.

CHAPTER XIII

HOSPITAL AND SANATORIUM TREATMENT

MILD cases of habitual constipation are met with that cause little inconvenience to the patient; but, as we have already seen, long drawn out and complicated cases of the disease also exist. We have further stated that cases are by no means rare in which it is difficult to decide whether the case is fundamentally one of constipation or whether, on the contrary, the intestinal peristalsis is too rapid. Distinct from this we find numerous patients who assert that they are constipated but in whom it is impossible to determine the cause and the seat of the disease, or whether any complications exist, without an exhaustive examination and long and careful observation. This includes those cases of constipation in

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which there is a continuous pain in the abdomen, a gradual loss of strength, and even loss of blood, whether external or concealed.

In mild cases of constipation the treatment of the patients in their own homes without interruption of their business is not only possible but promises good results. But the situation is very different with advanced and obscure cases. In these the physician should earnestly advise a stay of longer or shorter duration in a hospital or sanatorium where doubtful and sometimes dangerous conditions can be more definitely and more speedily brought to light, and where the proper treatment, possibly operative, can be carried out.

If we have to do with long continued cases, or even if the constipation is complicated with other diseases, the treatment can be carried out at home if the mode of living is well regulated and the patient is intelligent and determined. But when we are dealing with intractable children or weak-willed adults, especially

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if there is also a condition of under nourishment, it is strongly advisable that the conduct and supervision of the treatment should be entrusted to a nurse skilled in dietetics. We have further repeatedly stated that in the case of patients continually on the go, mentally and physically restless, and always busy about something, a rest cure for several weeks in conjunction with the constipation diet may not only bring about a cure of the intestinal trouble but also cause an increase in weight and thereby exert a favorable influence upon the nervous system. In these cases the removal of the patient from the family surroundings and the supervision of the treatment by a prudent and intelligent nurse, of course under the direction of an experienced physician, are most advisable.

If such a course of treatment can not, for any reason, be carried out in the home, it is then advisable to remove the patient to a dietetically well-ordered hospital or sanatorium. One great advan-

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tage of this is that in such an institution systematic examinations and analyses can be made of the feces which is, we need hardly say, a matter of great importance in determining the extent of the intestinal function and the rate of progress toward normality. It is considerably easier to meet the difficulties arising in the course of the treatment in the hospital rather than in the home. Furthermore, changes and modifications in the diet can be more easily effected in the hospital or sanatorium, and if they do not have the desired result, supplementary measures can be promptly instituted. But above all it is much easier to teach the patient to submit to the prescribed discipline and rules, to arouse his energies, and, by demonstrating the success already obtained, to spur him on to a faithful continuance of the treatment at home after leaving the institution. After the bowels have been functioning readily for some time, when it comes time to make a change in the diet, it will be advisable for the patient to

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return to the hospital for a few days in order to try out the new diet there, the physician observing its effects and seeing if it is well borne.

CHAPTER XIV

OPEN - AIR TREATMENT

BY THE term "open-air treatment" I mean a course of treatment carried out for a definite period under favorable climatic conditions and with a diet as primitive as possible but conducive to health and especially adapted to the stimulation of peristalsis. Medical science has as yet little to report regarding such treatment, and in consequence a knowledge of it has not yet come to the general public. A few wise ones, however, have known and proved the value of this "cure" for a long while.

The best teacher of the value of country life treatment was the World War, when every one, more or less, was obliged to reduce the luxurious standard of living of peace time to the level of that of the farmer. Then a whole series of

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diseases of metabolism, such as gout, diabetes, obesity, etc., suddenly became rarities and among them, as we have already noted, was chronic constipation. This lesson should not be lost, not necessarily to the extent of the deprivations that the war imposed, but to the extent that we should be willing to do without the superfluous and more delicate articles of diet at least for a few weeks.

Such a course of treatment is best carried out by one's self and in the country, where the surroundings give the conditions of life and of nutrition that are most beneficial to the city dweller. Simple food, free from all tidbits and articles of luxury; reduction in the quantity of meat; food rich in vitamins; the excellence and variety of the dairy products; fresh garden stuff; the restful life, disturbed by no city noises, no telephone, no business letters or telegrams, and the resultant freedom from all agitation; the opportunity to refresh the body and mind by working in the field and garden, by hunting, fishing or riding, by rowing or

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swimming,—with all these factors we possess a really ideal method not alone for the strengthening of the body and the regulation of the intestinal functions, but also for supplying the man, if I may so express it, with much needed mental and spiritual calories.

Goethe knew all this when, through *Mephistopheles*, he gave to *Faust*, buried in his books, the advice:

“Go take thee with the peasant to the moor,
And straight begin to hew and hack;
Confine thee there, with patient mood,
Within the narrow beaten track,
And nourish thee with simplest food;
Live with the beasts, and count it not too low
To dung the corn-fields thine own hand shall
mow.”

(*Blackie's Translation.*)

It is especially to men who are not in position to live in accordance with the laws of nature and hygiene, because of their occupation, their restless or their sedentary work, that the urgent advice should be given to lead such a healthy life as this for at least a few weeks. Even tho the results of such a cure may not last

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they excel by far those of the cures followed in the large spas and other resorts, with their bustle, their fatiguing distractions, their unhygienic table, and a life that is practically nothing but a continuation of the ordinary nonsensical routine, differing only by a change in location. Such country life cures are especially to be recommended to those who are not richly endowed with worldly goods. What one goes without in the way of external comfort is richly compensated for by the many advantages that a simple restful country life offers.

Sufferers from habitual constipation, especially those with nervous complications, should take such an open-air cure as often as possible, at least twice every year. The more often such a course of treatment is undertaken the most lasting will be the results.

CHAPTER XV

TREATMENT WITH CATHARTICS

REGARDING the value of cathartics, I will repeat that it is not necessary to forbid the use of a mild laxative or to replace it by complicated measures in the case of one who has been taking it year in and year out without any untoward effects. I have shown that we can not deprive a man of the cathartics upon which he has been depending for years, without offering any substitute, but that we should make the attempt to arouse intestinal peristalsis by means of a rational diet to such a degree that he can then obtain a complete and lasting result by the continued use of small doses of harmless laxatives. When I add further that there can be no serious objection to the occasional use of a laxative when one is

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traveling or is living temporarily under changed conditions of climate or diet, or when one suffers, not from actual constipation, but only from a somewhat lazy digestion, I have mentioned all the conditions under which the use of laxatives is permissible. It is not necessary to explain that purgatives are not forbidden in cases of acute illness or of food poisoning. What I have in mind here refers only to cases of chronic retardation of peristalsis in the upper or lower segment of the large intestine.

I have already emphasized the fact that a cure of chronic constipation can never be obtained by means of cathartics alone. Just as a dose of morphin stills pain for a short time only and the return of the pain demands a renewal of the narcotic, so a single dose of a cathartic acts once and for that time only. And as one becomes accustomed to the narcotic, increasing doses are called for in order to obtain the desired results, so in the case of constipation one must gradually advance to the use of stronger cathartics and

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of larger doses in order to stimulate peristaltic action. And there are cases of constipation where such a point has been reached that cathartics have no effect whatever, or only if given in huge doses.

It is not solely on account of the merely temporary effect of the cathartic that we should abstain from its use, but because of the many by-effects associated with it as well. Among the most prominent of the latter is the irritant action upon the intestinal mucous membrane which leads in the course of time to a catarrhal condition. The habitual taking of strong cathartics is seldom unaccompanied by pain, especially when one resorts to the drastic purgatives. But even mild laxatives when taken in large doses frequently cause pain, and produce not normal but diarrheal stools. When strong cathartics are used a certain amount of utilizable food is expelled from the intestine, in consequence of which the person addicted to the habitual use of these drugs is liable to become weak, anemic, and emaciated. Not a few cathartic sub-

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stances by continued use will either cause bleeding hemorrhoids, or make those already present worse. Undoubtedly, if they are taken continuously for long periods these cathartic remedies are neither always effective nor always harmless.

How comes it then, we may ask, that in spite of this, nearly ninety per cent. of sufferers from constipation resort to this deplorable practise? In the first place, as I have observed in my own experience, it is known to very few persons that habitual constipation is, as a rule, amenable to cure by dietetic measures. The only thing that is known of diet is that one should take fruit or compote in the morning or the evening or drink buttermilk during the day. But there is absolute ignorance of the fact that a scientifically composed special diet may be arranged for use in cases of intestinal sluggishness, or, on the other hand, of spastic states.

But other reasons exist for the growing favor that cathartics enjoy. Formerly all drugs, the cathartics among them—those of the older generation still recall it

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with horror—were prescribed and compounded in the most repulsive form. Exalted heroism was required to take a swallow from the capacious medicine bottle, and between the parents and children there was always a conflict whenever there was question of taking any of the nauseous elixirs; and this conflict could be ended to the satisfaction of the contestants only by means of all sorts of promises and rewards. But to-day the situation is very different. Medicines are now put up in the most tempting forms; many have lost the semblance of medicine entirely, and through their preparations in the form of candy or chocolate have taken on the appearance of bonbons. In addition to this most of them have names that arouse the most lively expectations. It is then no wonder that people take a little laxative bonbon or chocolate lozenge at every opportunity. This is a matter of special concern in the case of children and growing youths. Of very few of these tempting and good tasting preparations does the mother or physician know

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the composition or the proportions of their active ingredients. Many of them may indeed be harmless, but, on the other hand, some contain harmful and even dangerous ingredients. And since it is precisely in children and growing youths, as we have already seen, that the lack of parental foresight regarding the use of laxatives brings its own punishment, it is necessary to warn urgently against these preparations of unknown composition that are often sold under false claims. When a cathartic is really needed we should select a preparation the ingredients and the actions of which are known.

How cathartics act may be explained briefly as follows: Their laxative effect is due to the fact that they either directly stimulate and accelerate intestinal peristalsis, or indirectly increase its rapidity by preventing the absorption of the intestinal fluids or by favoring the passage of fluids into the intestinal canal, thereby rendering the contents of the latter more liquid. The action is exerted in either the small or the large intestine, or in

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both. The action in the small intestine is exerted chiefly by those drugs that promote the excretion of fluid into the canal; but there are also cathartic remedies which so act upon both small and large intestine as to stimulate the peristaltic movements, and when given in large doses these may act so powerfully as to cause more or less severe colic. To the first named class of remedies belong the so-called saline laxatives, especially Glauber's salts, Epsom salts, calcined magnesia, potassium bitartrate (cream of tartar), sodium phosphate, and the numerous combinations of these salts.

The action of all the remedies in this group is markedly influenced by the degree of concentration in which their solutions are given. Concentrated solutions act, as we have learned from animal experiments, much more slowly than weak ones. The practical conclusion from this is that when we want to obtain a rapid action we must give the salt in weak solution, such as we find in many mineral waters for example, rather than in con-

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centrated form. Incidentally we would call attention to the fact that when a saline laxative, such as Epsom salts, acts very rapidly a considerable amount of utilizable nutritive material, especially fat, is removed from the body. This is the reason why, for example, a course at some spa where the water contains Epsom salts (sulfate of magnesium) is often recommended and proves effective in the treatment of obesity. Finally, these saline laxatives also free the intestinal canal from the products of decomposition and from bacteria, whence their frequent employment in cases of food poisoning, autointoxication, a stool stoppage of several days' duration, etc.

In this group of substances which at the same time promote the excretion and hinder the absorption of fluids within the intestinal canal, belongs the much used and abused calomel. This drug also has the reputation, altho medical opinion on this point is divided, of promoting the secretion of bile; and for this reason it is often given in all possible diseases of the

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liver and bile passages. However, it also exerts certain injurious by-effects, especially on the kidneys, and after continuous use for some time it may have a corroding action on the gums and mucous membrane of the mouth. In this same category of remedies belongs also a substance much used in recent years, namely, agar-agar. This is one of the chief ingredients of regulin, a favorite laxative in middle Europe at the present time.

To the group of cathartics which cause an acceleration of the peristaltic movement of the small intestine belongs castor-oil, among the best known, and then come colocynth, jalap, the much used podophyllin, and euonymin. While castor-oil is justly regarded as a mild and dependable laxative, the same can not be said of the other preparations just mentioned. That is the reason why to almost all prescriptions containing podophyllin, belladonna is added in order to obtain its well-known antispasmodic and anti-irritant action. But the continuous ad-

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ministration of belladonna preparations can certainly not be regarded as harmless.

The largest and most frequently employed group of cathartics acts by stimulating intestinal peristalsis. To this group belong, of the generally known products, the senna preparations in their various forms, also the cascara sagrada compounds, and the preparations of frangula (buckthorn bark), aloes, rhubarb, sulfur, and finally preparations containing phenolphthalein. These drugs differ as regards their irritant action. The preparations of senna, cascara sagrada, rhubarb, and sulfur, given in effective doses, irritate the mucous membrane of the large intestine only slightly; but aloes and the preparations containing phenolphthalein belong to the drugs which give rise to unpleasant by-symptoms when their administration is long continued. We know, for example, that aloes may cause an intense congestion of the mucous membrane of the large intestine. A long continued use of this same drug in its

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various forms may also cause a marked increase in the menstrual flow. From what has just been said we can also understand that the occurrence of bleeding hemorrhoids may result from the action of aloes. Phenolphthalein in its several combinations with other remedies, which are found on the market under various resounding and attractive names, acts injuriously, as I have often observed, on the kidneys and liver. In one case I saw jaundice follow the use of phenolphthalein for several days, and several instances have been reported of more or less severe poisoning by this drug. This should serve as a warning against its long-continued use. From what has been said here one can see how foolish and even dangerous it is to rely upon the recommendations of friends and acquaintances in the choice of a laxative. Apart from the fact that cathartics do not by any means always act the same way in every individual, these by-effects are also very different in different persons. In view of

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the general abuse of strong cathartics the question may be raised whether these drugs should not be withdrawn from the open market, to be sold only on a physician's prescription.

As I am well aware that errors and false views have a tenacious hold on life and can be only gradually uprooted, I cherish no illusions as to the effect of what I have just written. Indeed I should be fully content if only ten persons out of every hundred who have been living habitually on cathartics were converted. But I might at least be of service to the remaining ninety by offering them the advice, if they must continue in the habitual taking of cathartics, to try to get themselves down to the use of the mildest preparations that may be effective. To this end I have drawn up the following table of the most commonly employed cathartics, grouped according to the mildness or strength of their action. There is no attempt here to include all the cathartics in more or less common use.

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MILD CATHARTICS

Calcined Magnesia
Milk of Magnesia
Citrate of Magnesia
Licorice Powder
Istizin *
Rhubarb
Cascara Sagrada
Flowers of Sulfur
Cream of Tartar
Tamarind
Fig Syrup
Buckthorn Bark
Manna Syrup
Mannite
Mineral Oil
Castor-Oil

STRONG CATHARTICS

Aloes
Podophyllin
Eunonymin
Jalap
Colocynth
Scammony
Gamboge
Calomel
Phenolphthalein Preparations
Bitter Waters
Epsom Salt
Glauber's Salt
Croton-Oil

The strong cathartics should be used only on the advice of a physician, in small doses and only for a brief period.

How are cathartics to be employed? The best results are obtained when laxatives are taken either early in the morning upon rising, or in the evening at bedtime—never, therefore, on a full stomach, but only on an empty one.

It is very useful to know when to expect the action of the remedy to begin. Mild laxatives work in general more slowly, the strong purgatives more rap-

* Istizin is a synthetic dioxyanthraquinone occurring in the form of an orange-yellow crystalline powder, employed as a laxative in doses of 2 to 8 grains (0.13 to 0.5 gram).

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idly, often indeed so quickly as to take the patient unawares and perhaps cause him much embarrassment.

Strong purgatives should not be taken at bedtime, lest by their rapid action they disturb the night's rest. For the reasons already stated, strong purgatives should never be given during the menstrual period.

Mild laxatives are best given at bedtime, for then they will usually act in the morning, but in this respect there is considerable difference in different individuals. The observant patient quickly learns to estimate the time of action of his laxative and so is enabled to choose the best time for taking it.

Whether the action of a purgative is accompanied with pain or not is a matter of considerable importance. If it is so accompanied it must be changed to another. Again the cathartic should not produce thin or slimy stools; if it does, the dose should be reduced, and if that does not help, the remedy must be regarded as unsuitable. In case of a stop-

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page of the bowels of several days' duration, the patient often makes the mistake of not waiting for the action of the cathartic already taken but of following it quickly with a second and perhaps even a third dose. This irritates the intestine unnecessarily and when the hoped for result is finally obtained it is not an altogether normal one, but consists in numerous watery discharges accompanied by more or less severe colic.

It is a common belief among the laity, shared to a certain extent by physicians, that the cathartic should be changed frequently in order to avoid accustoming the intestine to its action. It is very true that remedies of this nature lose their effect within a short time, but the advantage derived in such cases from a change in drugs, unless the change be to a stronger one, is hardly appreciable. According to my experience when any cathartic quickly loses its effect a change to another leads to no permanent or even long continued improvement. The notion that the action of cathartics quickly becomes

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blunted is not well founded, and so long as one is pleased with the effect of any harmless laxative it is not advisable to look around for another to take its place.

In addition to those laxative remedies that directly or indirectly stimulate intestinal peristalsis, there are others whose mission it is to cause a relaxation of spasmodically contracted intestinal coils, and so to open the way to the passage of feces. To this group belong belladonna and the alkaloid derived from it, atropin. The latter has in recent years been recommended and prescribed for its laxative effects by many prominent physicians in Germany. Both these substances, however, may cause certain unpleasant by-effects, such as dryness of the throat and disturbance of vision, and they should therefore be used only under careful medical direction. Their most efficient action is in relieving the colicky pains associated with constipation.

Cathartic remedies may be given in the form of rectal injections as well as by the

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mouth. It was a common practise in former times to give decoctions of senna and laxative saline solutions in various degrees of concentration by rectal injection, but at the present time this method of administration has been rightly abandoned for the reason that the good effect is quickly overbalanced by symptoms of irritation and catarrh of the rectum.

The suggestion has often been made that cathartics be administered by hypodermic injection, and many preparations have been recommended for this purpose. It need hardly be said, however, that this mode of administration should be thought of only in cases of acute intestinal stasis. In chronic constipation, on the other hand, apart from other objections—the subcutaneous injection of cathartics is, for example, very painful—the circumstance of the injection having to be made every day or every other day, would stand in the way of its use. The same objection would hold in the case of the injection of cathartics directly into the blood stream

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(intravenously). A discussion of the preparations offered as suitable to this mode of administration is therefore uncalled for.

CHAPTER XVI

DOMESTIC REMEDIES

BESIDES the laxative proper, there are a number of more or less harmless domestic remedies that may be given with advantage either alone or in conjunction with the constipation diet. There are undoubtedly in many families certain inherited formulas which often are not at all bad. For children and also for adults such innocuous domestic remedies are often much to be preferred to the strongly acting medicinal cathartics. But one should always bear in mind that even the long continued use of these household remedies will never definitively regulate the intestinal functions, and that a continuous and systematic constipation diet such as we have described in a previous chapter, must without question, be regarded as the most effective and best

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means of treatment. We will note here a few of the most approved of these domestic remedies that are suitable for temporary use, as on journeys by land or sea for instance. It is also to be understood that these are effective only in mild cases of sluggishness of the bowels or of constipation.

1. *Milk-sugar*. This substance can be taken dissolved in cold water, upon rising in the morning, or at night before going to bed, or it can be taken twice a day dissolved in tea or coffee. The dose is a teaspoonful for children or a dessert-spoonful for adults, and care should be taken to use a chemically pure product only. As milk-sugar is only moderately sweet, the usual amount of cane-sugar can be used in the tea or coffee. Milk-sugar can also be mixed with stewed fruit, especially apple sauce and plum or fig jam, which are more agreeable than other fruit jams to many patients. Finally, milk-sugar can also be taken with buttermilk, fermillac, zoolak, Bulgarian milk, kumyss, etc., or mixed with pot-cheese or

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cream cheese. Instead of milk-sugar alone, the combination of milk-sugar and flowers of sulfur has been recommended as very efficacious.

2. *Flaxseed or Fleawort* (the seeds of *Plantago psyllium*). The favorable action of both these seeds is probably due to their fatty and mucilaginous contents, both of which promote peristalsis. A teaspoonful of the seeds is put in a glass of water and stirred until they swell, when the whole is thrown on to a sieve and pressed through it, the insoluble part being left behind. Of this mucilaginous suspension a glassful is drunk in the morning or evening. The addition of lemon juice and sugar will remove the somewhat flat taste of the preparation.

3. *Senna Pods and Leaves*. Six, eight, or ten senna pods, the number varying according to the degree of the constipation, are put in a glass of lukewarm water, covered with parchment paper, let draw for twelve hours; and then the water is poured off through a glass filter and the liquid is drunk. The brownish liquid is

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odorless and tasteless. If the constipation is more obstinate, we can use a larger number of pods or make an infusion with hot instead of lukewarm water. This remedy causes no colic even when taken in large quantities. A fluid extract of senna pods that I introduced a number of years ago can be recommended as a dependable and an efficient preparation in mild cases of constipation. For adults a dose of this is a dessert-spoonful three times a day; for children a teaspoonful at the same intervals. Regarding the use of *senna leaves*, of which a tea is made in the same way as of the pods, it is to be noted that they often cause pain in the abdomen, but this effect can be obviated by extracting the leaves with cold water. A senna preparation which enjoys some repute is made as follows: A few senna leaves are enclosed in a muslin bag and stewed with prunes; and from six to ten of these prunes with their juice are eaten morning and evening. The active substance of the senna, cathartin or cathartic acid, is taken up by the prune juice and imparts to the

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latter its laxative property. Senna leaves are also one of the constituents of licorice powder.

4. *Buckthorn Bark or Frangula*. This substance (*Rhamnus frangula*) which is in quite common use in Germany is a very good household remedy. It closely resembles in its action the allied species, *Rhamnus purshiana*, or cascara sagrada, indigenous in America. It is prepared and used in the form of a decoction in the proportion of half an ounce (16 grams) of the bark to eight ounces (250 c.c.) of water. Its action is prompt and painless. The remedy can be used occasionally without harm. The fluid extract of this substance, of definite strength, is official in the United States Pharmacopœia. It is given in doses of 10 to 20 minims (0.5-1.3 mls).

5. *Fatty Oils, and Liquid Paraffin*. The fatty oils, especially olive-, palm-, sweet almond, and peanut-oils, are sometimes taken in doses of one or two dessert-spoonfuls morning and evening in cases of sluggishness of the bowels or constipa-

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tion of very mild degree. They are quite efficient remedies in such cases, especially when it is desirable to put on a little more weight at the same time. These oils are particularly suitable for use in the case of small children or at the time of puberty. When oil in pure form is not well borne it can be used with the addition of lemon juice as a dressing for salads, such as head lettuce, tomato or potato salad, etc. The oil in which sardines are packed can also be strongly recommended for this purpose. Cod-liver oil flavored with lemon juice or peppermint oil is another substance that acts as a mild laxative. If the taste of the pure oil is nauseous to the patient an emulsion can be prepared, either extemporaneously or, better, in permanent form by the apothecary.

On the borderline between drugs and household remedies stands liquid paraffin or mineral oil, the action of which was first discovered in England, whence the employment of the remedy spread rapidly to the Continent and to America. It is one of the by-products of petroleum re-

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fining and consists of hydrocarbons of the aromatic series. Paraffin-oil, to be suitable for either internal or external use, should be chemically pure, tasteless and odorless, and should not turn brown or black on the addition of sulfuric acid. Pure mineral or paraffin-oil is not poisonous even in very large doses, but impure oils of this class may cause gastric and intestinal disturbances, and some cases of actual poisoning have been reported from their ingestion. The pure paraffin taken by the mouth passes unchanged through the intestines, except that it acquires a greenish or brownish color, probably in consequence of admixture with bile. The discharges during the use of mineral oil are seen on examination to contain a great number of large and small fat globules.

Since the introduction of the paraffin-oil for the treatment of sluggishness of the intestines, all sorts of preparations and combinations bearing various names have been put on the market, most of them being quite serviceable. Many of these are in the direction of making the oil

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more palatable by the addition of some fruit essence. A permanent emulsion is also made in Germany bearing the name of Paraffinal, and an excellent preparation, sold in Vienna under the name of Cristolax, is made of equal parts of liquid paraffin and dry malt-extract. This latter preparation is recommended by many prominent physicians as an effective and dependable laxative. I employed liquid paraffin in unmodified form and also in various admixtures. The simplest mixture is to drop a dessert-spoonful of oil in a wineglassful of warm milk; this, when thoroughly stirred, makes a very palatable preparation. When we are dealing with a patient who has a very sensitive palate the paraffin can be easily taken in freshly prepared almond-milk. And finally it may be given mixed with sweet almond-oil, and I strongly recommend this mixture since by its administration we introduce some fat into the organism at the same time.

The dose of liquid paraffin varies with the degree of the constipation. The usual

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dose is two dessert-spoonfuls a day, but more can be taken if needed, and in mild degrees of constipation the oil acts well in smaller doses. In cases of obstinate constipation we shall do well to begin the course with larger amounts, say three or four dessert-spoonfuls a day. It has been found that the action of the oil is not rapid and sometimes two or three days elapse before any satisfactory effect is noticeable. After a little while we may gradually reduce the dose to two dessert-spoonfuls a day.

An experience of several years in the use of mineral oil has taught us that the remedy is quite curious in its action. There are patients who react to it regularly and promptly; and I have seen this favorable action especially in patients whose passages were hard, dry, and insufficient in amount. But there are other patients with whom the effect at first is most promising, but this quickly lessens and finally ceases altogether. Again, I have seen patients in whom the oil, without producing any stools, leaked away,

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much to the patient's discomfort, soiling his linen and bed. When the oil acts well I often advise the patient to continue its use for some time, but only twice or three times a week. I have seen most satisfactory results following this intermittent administration of the oil, which can be continued for weeks or months without harm. The remedy is also well suited to the treatment of constipation in children, especially when the stools are hard, dry, and covered with mucus; in these cases it should be given in doses of a teaspoonful twice a day.

Is liquid paraffin a curative remedy? I think not. I have never observed a permanent effect in the sense that a complete restoration of the bowel functions is obtained after the use of the oil alone for a considerable period. But I have knowledge of a long series of patients in whom, after an unsuccessful trial of the oil by itself, its use in combination with a rational constipation diet has led to a lasting cure. However, we can say that among all the known non-dietary methods, the

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administration of paraffin, despite an occasional failure, stands in the front ranks of anticonstipation measures. It is to be remembered, however, that mineral oil, like all other cathartic remedies, fails when the fecal accumulation is in the rectum. As I shall show in the following chapter it can be used with great benefit in such cases as a retained enema.

6. *Glycerin*. This substance has sometimes been given internally in dessert-spoonful doses as a laxative, but its most frequent use is in the form of very small rectal injections (microclysters) or in the shape of suppositories. One great advantage that glycerin in the form of a suppository inserted into the rectum has over other laxatives is that its effect is obtained within fifteen minutes or so. The dose of glycerin when injected is 30 to 75 minims (2 to 5 grams). It is injected slowly into the rectum by means of a small rectal syringe, and then the patient lies in bed or on the sofa until a strong desire to go to stool is felt, which is usually in about a quarter of an hour. The use of glycerin

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suppositories is much more convenient, and we would especially recommend the so called hollow suppositories, which are made of cocoa-butter, with a central cavity containing about 30 minims of glycerin. The action here is equally prompt, following within the time above mentioned. These suppositories are especially convenient for use in the case of children, with whom a dose of 15 minims will be sufficient.

Unfortunately, however, glycerin has a slight disadvantage in that its long continued use is apt to cause some irritation of the rectal mucous membrane. In order to prevent this it will be well to mix the glycerin with liquid paraffin in the proportion two parts of glycerin to eight of the oil. The mixture is perfectly innocuous and can be used for an indefinite period without causing any irritation. This use of glycerin is of especial service in cases of constipation located in the lower segment of the large intestine, but its effects are less marked when the seat of the stoppage is in the upper part of the

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bowel. If the rectum be in a condition of great irritation or if we have to deal with inflammation, ulcers, or tumors of the rectum or with hemorrhoids, we had better abstain from the use of glycerin enemas or suppositories.

7. *Bile Acids.* The bile acids possess the property of exciting increased peristaltic activity of the large intestine. For this purpose the administration of the bile acids themselves or of their sodium salts in solution or by suppository is recommended. This remedy in either form acts promptly after its introduction into the rectum, a copious discharge of solid fecal matter following in from ten to thirty minutes. Experience with these preparations, however, is as yet somewhat limited.

CHAPTER XVII

ENEMAS, RETAINED INJECTIONS, AND INTESTINAL IRRIGATIONS

ENEMAS, in possibly more primitive form, have been in use from the earliest times. We find evidences of their employment among the ancient Egyptians, who are said to have ascribed the discovery of the enema to their holy bird, the Ibis, which is fabled to have injected water into the rectum through its beak inserted therein, altho there is probably a confusion here with the god Thoth, whose name is represented by the hieroglyphic of the head of an ibis. In the great collection of recipes in the papyrus Ebers, which was compiled about a thousand years before Herodotus, emetics and enemas fill a considerable part. The father of medicine, Hippocrates, has

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left us very exact directions for the giving of clysters or enemas, and from his time down to the present day enemas and similar forms of treatment have been valued as important therapeutic measures for the relief of chronic constipation associated with diseases of the large intestine.

In all the procedures here discussed the fundamental idea is the rapid and painless removal of feces impacted in the large intestine or rectum. This end can be obtained in various ways: either by mechanically starting up the action of the intestinal musculature by some strong irritant; by dissolving the hard contents of the bowel through the slow action of some suitable substance, or finally, by softening the thickened fecal mass and then removing it, as one would in the case of ingested matter in the stomach, by means of an irrigating apparatus.

The best known and most commonly employed form is a simple enema. But even here the action depends upon the way in which the enema is given and the amount and composition of the fluid em-

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ployed. As regards the first mentioned point, we no longer use the old-fashioned clyster-syringe but, as a rule, employ fountain syringes with reservoirs of glass, tin, aluminum, or rubber, the last being the most suitable. Soft rubber tubes are also exclusively used for introduction into the rectum. These should be about eight to twelve inches (20 to 30 cm.) long and their lumen should be approximately one-third to one-half inch (8 to 12 mm.) in diameter. There should be two side openings at the tip, the edges of which should be very smooth and rounded. A tube with a terminal central opening is unsuitable, for the hole is very liable to become clogged by fecal matter or to be closed by contact with the mucous membrane of the rectum. The flow of the injected material can be regulated by means of a stopcock near the attachment to the rectal tube. The tube should be lubricated with vaseline, liquid paraffin, or oil before being introduced into the bowel. The patient should lie either on the back or the side, tho many physicians prefer

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the knee-elbow position. The position of the patient, however, does not make much difference in the ease of injection. The tube should not pass up more than four inches (10 cm.) into the rectum, for if the attempt is made to pass it further it will turn spirally on itself and so impede the flow of the injected liquid. That the tube should be thoroughly cleansed inside and out after use goes without saying.

Besides the irrigators in fountain-syringe form there are other varieties of apparatus designed to serve the same purpose, such as the so-called "enema pumps," and also rubber bulbs of pear shape and of various sizes; these do not seem to me to be superior in any respect to the fountain syringe. The rubber bulb finds a rather extensive use in children's practise, but here the piston syringes are better; these are provided with soft rubber rectal tubes and are to be had in all sizes. In place of any of the appliances just mentioned one can use a simple soft rubber rectal tube with a glass funnel inserted into its outer extremity into which

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the fluid to be injected can be poured. Of course this is of use only when it is desired to inject a small quantity of fluid to act simply in the rectum or lowest segment of the large intestine.

The quantity and composition of the fluid to be injected will naturally vary according to the purpose for which the enema is given. When we wish merely to stimulate the rectal mucous membrane we use simple water at room temperature, the amount not exceeding one pint ($\frac{1}{2}$ liter). No better results are obtained from the use of larger quantities than this, and there is always the danger, if too much fluid is thrown into the rectum, of distending it unnecessarily and so weakening its walls. The pressure under which the fluid enters the bowel should not exceed that produced by elevating the bag about 3 feet (1 meter). All sorts of substances can be added to the water, such as milk-sugar or grape-sugar, honey, glycerin, Carlsbad salts, ordinary table salt, or Glauber's salts. But as the injected material is retained only a short

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time in the rectum it is questionable how far the added material can increase the effect of simple water. This can be determined only by experiment in individual cases, but the substances above mentioned can certainly do no harm if added only in moderate quantity.

In what cases of habitual constipation are enemas of service? Before answering this question we must first distinguish between occasional and habitual use. The occasional employment of an enema may be of service in any case of chronic constipation, and with children especially it is greatly to be preferred to the giving of cathartic drugs. The main field of usefulness of an enema lies in those cases in which the fecal stoppage is in the lower portion of the large intestine. Here, as we have already seen, purgatives may have no effect whatever, while the giving of an enema will have an immediate result. We may say by way of parenthesis that the information obtained by a Roentgen ray examination will be of great service here in disclosing the seat of the

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trouble. On the other hand when the stoppage is in the upper reaches of the large intestine, a rectal injection is often without any effect whatever.

Can we and should we make continued employment of enemas? This question can not be answered out of hand. As a permanent use of enemas can by no means be regarded as agreeable, the patient will seek to be delivered from its tyranny at the earliest possible moment and the physician will certainly wish to help him obtain his freedom, especially as other ways and means exist by which the sluggish peristalsis can be aroused to action. It should be said, however, that many physicians have an exaggerated idea of the injury which may result from the use of enemas when given for a definite purpose. The most common error and one which I often see made consists in the employment of too large a quantity of water or in the addition of unsuitable substances. If one uses only water or camomile tea or a weak saline solution in proper amount, and adds no harmful sub-

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stance to it, one need have no fear of the injurious consequences of enemas.

Retained Injections. Two kinds of injections are indicated by the term retained enemas or retained injections, the first a measure by which hard fecal masses are gradually softened, and the other one by which painful contractions of the intestine are favorably influenced. The quantity of material employed in the retained enemas of the first mentioned sort may be large or small according to the seat and extent of the stoppage, whether the entire large intestine is filled with hardened fecal masses, or only the rectum. In the former case when the impaction extends a considerable distance the softening injection consists usually of oil or liquid paraffin. The oil used may be olive-, sesame-, linseed-, or any oil that is free from rancidity. A formula that I have employed frequently for making an oil injection is as follows: A piece of soda the size of a bean is dissolved in half a pint of water; to this two dessert-spoonfuls each of cod-liver oil and of olive-

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oil or castor-oil are added, and the mixture is thoroughly stirred. This makes a good emulsion which flows much more readily through the rectal tube than pure oil. The action of the oil injection has never been very clearly explained, but as a result of numerous investigations made to determine this point I may say that the theory that the oil assists in the softening of the fecal masses is hardly tenable. It is much more probable that intestinal peristalsis is urged to increased activity through the formation of fatty acids. But it is possible also that the bathing of the intestinal mucous membrane with oil relaxes the spasmodic contractions of the bowel and so facilitates the passage of the accumulated fecal masses.

The administration of retained injections is exactly similar to that previously described. They are best given in the evening at bedtime and should be retained in the bowel for eight or ten hours. The quantity of the injected material should be about 6 ounces (200 grams). Many patients to whom the necessity of holding

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the injections for so long a time is explained, at first exclaim that that is impossible, but an actual trial soon convinces them that such a small quantity as this can be retained for hours without any difficulty. In the case of a person who is sick in bed the injections can be given just as well early in the morning, but patients who are up and about and go to business regularly must be cautioned not to take it at this time, for when they move about, especially if there happens to be any relaxation of the sphincter, or closing muscle, of the anus, a portion of the injected fluid may ooze out, much to the embarrassment of the unfortunate patient. After the injected material has been retained for about eight hours, one usually feels an inclination to go to stool and then the passage is, as a rule, easy and copious. But if no operation takes place, a so-called "encouragement enema" (*Ermunterungsklystir*) must be given in the usual way the following morning in the shape of an injection of a pint of water or camomile tea. It is seldom that

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this encouragement enema also fails to work. These retained injections have been widely used during the past twenty-five years, especially in Germany, and it can not be denied that they have been shown practically to constitute a method as efficient as it is innocuous in the treatment of constipation.

But these enemas have one great disadvantage, in that they are frightfully tedious and reduce the patients to slavery. For this reason some other method is usually preferred, especially the constipation diet, and the retained enemas are reserved as a last resort after the failure of the dietetic and other therapeutic measures which we are discussing. There is much less to be said against the use of the small enemas (*mikroklisme*) which have been referred to briefly in a previous section of this chapter, and which are especially suitable for treatment of those cases in which the rectum is stuffed with a large accumulation of hard thickened masses of feces. In such cases by means of a piston syringe we inject from 2½ to

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5 teaspoonfuls (10 to 20 grams) of the oil mixture above mentioned several times a day until a softening and loosening of the impacted matter is effected. From an esthetic standpoint this procedure must certainly be preferred by both physician and patient to that formerly recommended, namely, to empty the rectum by the finger.

Besides employing these retained injections for the purpose of emptying the lower bowel, one can make use of them as applications for quieting pain in catarrhal inflammation of the large intestine and rectum and especially in cases of painful spasmodic contraction of these parts. The amount of material used in these pain-relieving enemas is the same as in the others, namely, 6 ounces (200 grams) for adults and half as much for children. The best substance to be used for these injections is hot camomile, valerian, or peppermint tea, but when retained injections are used for the purpose we may add any of the antispasmodic or pain-stilling medicaments to advantage.

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I have sometimes observed surprising results from the use of these enemas, or as I call them, "internal warm cataplasms," in catarrh of the large intestine. In addition to the retained injections just described, many medicaments of all sorts in watery solution have been given by injection in catarrhal conditions of the lower bowel. But some of these are harmful rather than beneficial, and it is therefore advisable to seek medical advice before using any substance save those I have enumerated. I am convinced that the use of strong enemas or retained injections may not only increase catarrhal inflammation already present in the intestine but may even inaugurate it.

Rectal Irrigations. Just as we can wash out the stomach, so are we able also by repeated irrigations gradually to soften the fecal masses in the large intestine and wash them out of the rectum by means of suitable apparatus. At the same time these irrigations also serve as a most efficacious means of stimulating intestinal peristalsis. The technique of

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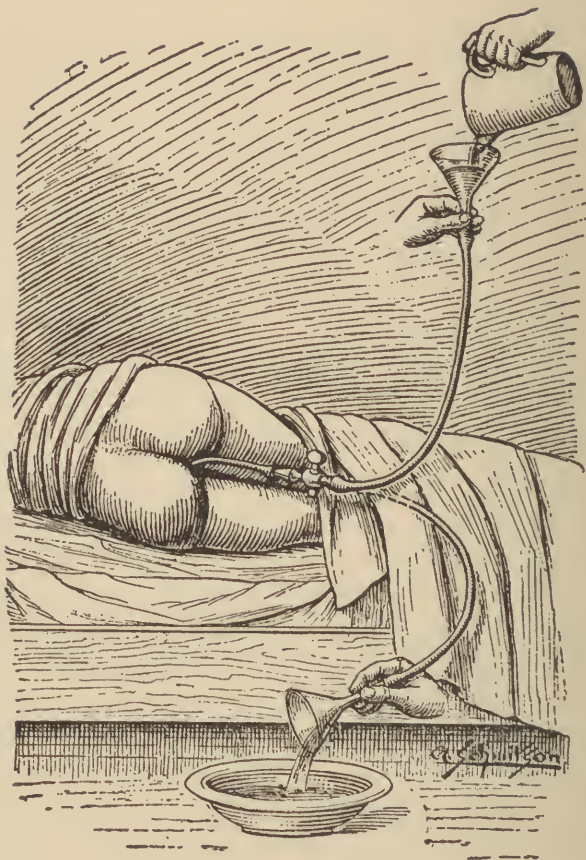


FIG. 3.—Washing out the Bowel.

intestinal irrigation (see Figure 3) is as follows: In a large receptacle is put

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about ten quarts of soap and water and, while stirring, one or two dessert-spoonfuls each of olive-oil and castor-oil are added for each quart of water. The patient lies in bed and before the operation begins he is turned on his left side with buttocks elevated and brought to the edge of the bed. The instrumentarium consists of a soft rubber rectal tube into which is inserted a glass tube, the other end of which is inserted into a soft rubber tube about five feet (1.5 meter) long, provided with a stop-cock. To the upper end of this long tube is attached a large glass funnel with a capacity of at least half a pint. The well lubricated rectal tube is now inserted, the funnel is elevated about three feet above the patient and some of the fluid is slowly poured into it. Then the funnel is lowered and the material escaping from the rectum is received in a porcelain pail. The first washings are usually clear, but the longer the process is continued the more deeply stained is the outflowing liquid. The alternation of inflow and outflow is continued until

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the escaping fluid again becomes clear which is the signal to discontinue the operation. Usually at the conclusion of this irrigation the patient feels an inclination to stool which may be gratified in the usual manner. It may happen however that even after an irrigation with as much as 10 quarts or more of fluid the desired result fails of accomplishment. In such a contingency the operation may be repeated the following day. In cases of extremely obstinate constipation I have sometimes been obliged to increase the amount of the irrigating fluid gradually up to 30 or 40 quarts before obtaining a satisfactory result.

The procedure we have here described is naturally to be reserved for extremely protracted cases of constipation, but it is then the most certain of any in its results and should never be neglected. It goes without saying that this method should be carried out only by the physician or under his direction by a nurse who has had experience in its execution.

In addition to the mode of intestinal

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irrigation here described other somewhat similar procedures have been recommended, but they are more complicated and produce no better results.

In conclusion I would present here a short table showing what substances are harmless when added to the fluid used in an enema or a retained injection, and can therefore be employed without danger by the patient himself, and what substances should never be used except on the physician's order.

SUBSTANCES USED FOR ENEMAS AND RETAINED INJECTIONS

<i>Harmless Additions</i>	<i>To be Used only under Medical Advice</i>
Oils	Alum
Castor-Oil, Cod-liver Oil, and Soda mixture	Tannin
Paraffin	Acetate of Lead
Neutral Soaps	Nitrate of Silver
Honey	Corrosive Sublimat
Weak Saline Solutions	Carbolic Acid
Solutions of Carlsbad Salts	Lysol
Glycerin	Protargol
Milk-sugar	Albargin
Grape-sugar	Dermatol
Camomile, Valerian, Pepper- mint or Walnut-leaf Tea	Sulfate of Zinc
Permanganate of Potas- sium *	
Boric Acid **	
Resorcin	
Bismuth Preparations	

* Permanganate of Potassium in 0.5 to 1% solution.

** Boric Acid in 3% solution.

CHAPTER XVIII

ABDOMINAL MASSAGE

ALTHO abdominal massage is one of the oldest of the measures employed in the treatment of constipation, opinions as to its mode of action and value differ widely. That need cause no wonder, for a well-executed abdominal massage is certainly a work of art and, as in other fields, the number of real artists in this one is not very great. Failures due to the poor work of a masseur or masseuse ought not to be taken as a measure of the value of the method in general. The best evidence that an artistically performed massage is at least of great assistance in the treatment of habitual constipation is afforded by the fact that it has, in the course of centuries, won for itself a place among the recognized therapeutic measures.

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And here the question must be raised whether abdominal massage is by itself an effective *curative* measure in chronic constipation, that is, whether or not it produces results that will continue after the cessation of the treatment. On this point I must range myself among the skeptics. I have been consulted by a great number of patients, both men and women, mostly of the well-to-do classes, who had been treated by massage for many weeks and months and even longer, and with few exceptions they have admitted that, while they had observed a very satisfactory result so long as the massage was continued, there could be no claim of any permanent cure. If that is so we can attribute to abdominal massage the rôle of an accessory therapeutic measure, but nothing beyond that. In the discussion that follows it is to be understood that I am in favor of the method only when it is carried out by a physician or by some person who has been trained under medical guidance.

Many of the foremost writers on dis-

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eases of the intestines in recent times can see nothing in abdominal massage beyond a form of suggestion. I would not attempt to deny that the suggestive influence of the physician, whether in the form of mental suggestion only or strengthened by some mechanical or instrumental measures, acts, or at least can act, effectively here as in other diseases. But the value of massage is in no way depreciated even if regarded as a purely mechanical measure. The main point is that it shall prove itself a useful accessory therapeutic procedure.

Should the patient massage himself? In general I should not look for great success in such a case, tho it may happen that occasionally an observant person will learn the art by watching a masseur, and can then imitate his manipulations in a satisfactory manner.

This is not the place to give the reader an exhaustive description of the procedures employed in abdominal massage, and we shall content ourselves with a brief sketch of the most important manipula-

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tions (see Figures 4 to 7). The first of these is a rubbing of the abdomen (*effleurage*) in which the hand passes gradually from slow, gentle, and wide sweeps to forcible, narrow, circular movements.



FIG. 4.—Effleurage of the Large Intestine.

These are followed by actual kneading (*pétrissage*), in which the operator begins in the region of the cecum and presses down deeply into the abdomen, following along the course of the entire colon, kneading it vigorously. Besides

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this the abdomen is slapped with the open hand, following as before the course of the large intestine, beginning low down on the right side; the abdomen is chopped with the outer edge of both hands; and the viscera are shaken by the hand (*ta-*

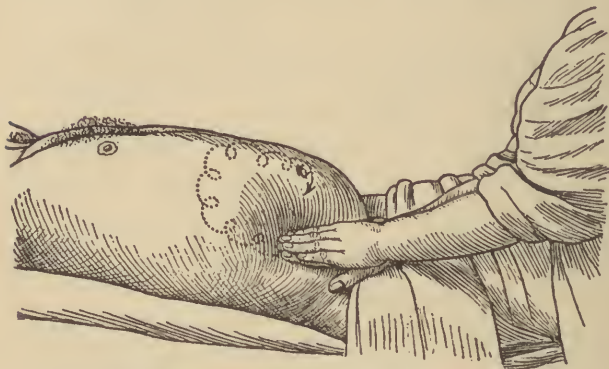


FIG. 5.—Pétrissage of the Large Intestine.

potement), beginning behind at the false ribs and ending at the pubic bone in front. Finally, when the fecal stoppage is deeply seated we can practise rectal massage by means of an inserted finger. In addition to the procedures just mentioned, there are many others which every masseur finds out for himself after a

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fashion. All these manipulations are practised systematically and in order. The duration of the séance should be about ten minutes, but there are good and

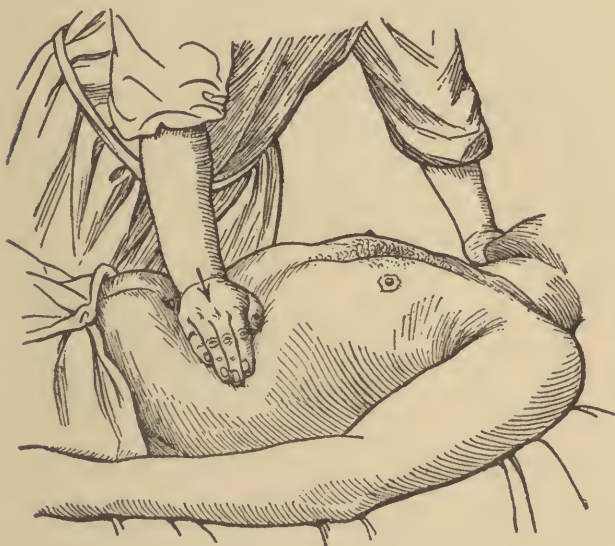


FIG. 6.—Squeezing out the Descending Colon.

skilful masseurs who regard a treatment of four or five minutes' duration as all sufficient.

In what cases of constipation should abdominal massage be employed? It is

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best adapted to the correction of the cases of simple intestinal sluggishness previously described in persons with a relaxed

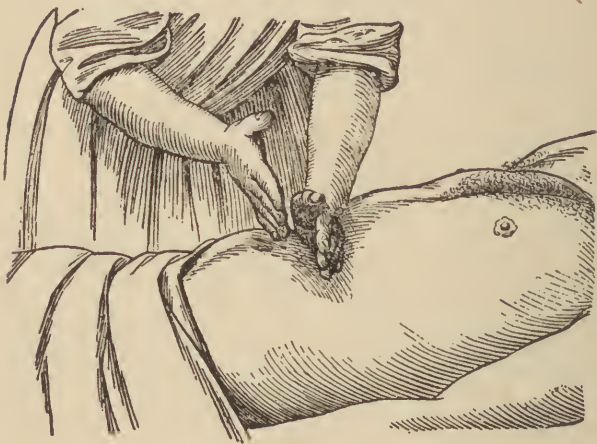


FIG. 7.—Chopping Massage of the Abdomen with both Hands.

condition of the abdominal walls, such as observed, for example, after repeated pregnancies or after a successful treatment of obesity, or in any case of poorly developed abdominal musculature. Indeed, I am inclined to believe that in most of these cases the strengthening of the

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abdominal muscles is the chief factor in successful massage. But even in cases of constipation occurring in individuals with well-developed abdominal muscles

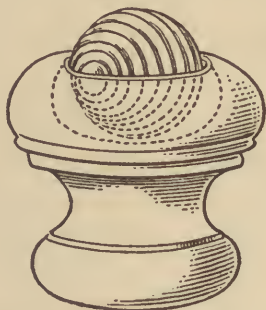


FIG. 8.—Massage Ball, Consisting of a Free-rolling, massive, ribbed Ball.

massage can be used to advantage as an adjunct to the constipation diet. In making these remarks I am assuming, of course, that there is no complication in the shape of diseases of the liver and bile passages and especially that there is no disease of the intestines. One should make it a hard and fast rule that when the constipation is associated with pain in any part of the abdomen massage should

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be undertaken only after a careful medical examination and also only with the physician's permission. Not infrequently, I have seen attacks of gallstone or renal colic that had been latent for years reappear after several séances of

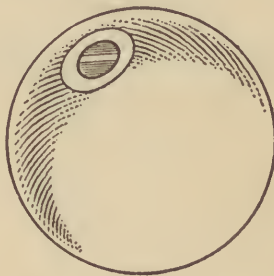


FIG. 9.—Hollow Massage Ball of wood. This has an opening closed by a wooden screw; by filling the ball with shot it can be made of any weight desired.

abdominal massage. And further, I need not say that massage must not be undertaken if there is any least suspicion of appendicitis or of a gastric or duodenal ulcer.

The best apparatus for giving massage is unquestionably the human hand which, when the tactile sense is well developed, is capable of carrying out the most effec-

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tive and astonishing procedures. The so-called massage balls (Figures 8, 9 and 10) are also effective. These are either rolled with the hand along the course of

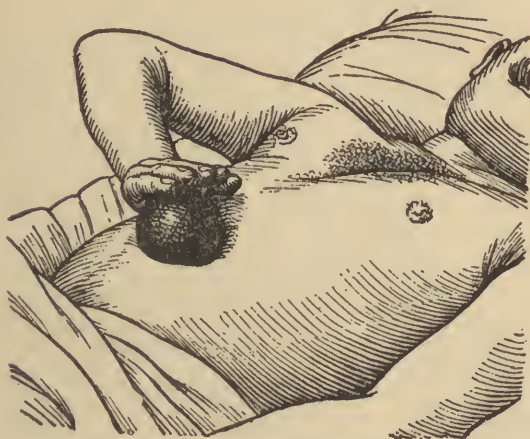


FIG. 10.—Ball massage.

the large intestine or are moved in some special manner by means of electricity (vibratory massage), see Figure 11. These mechanical measures are, however, much more clumsy than manual massage. I do not regard vibratory massage as in any way equal to manual massage, altho

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I often make use of it, for in the hands of a physician or a good nurse it may do very good service. Massage can profitably be

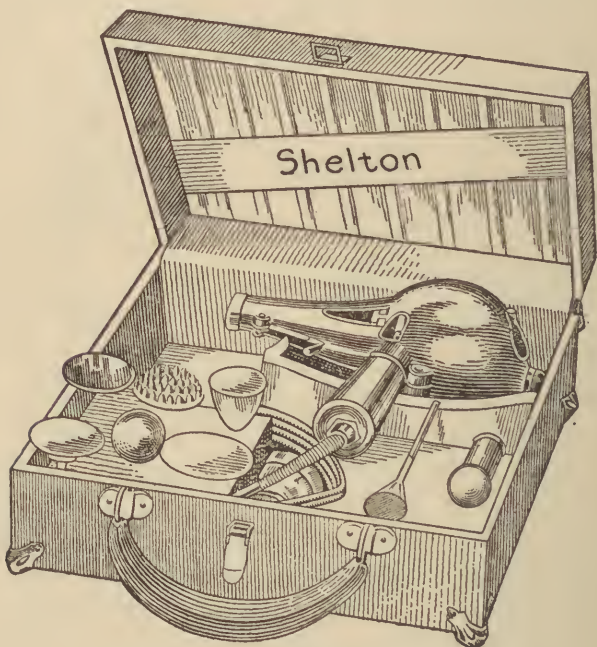


FIG. 11.—Vibratory Massage Apparatus.

combined with electrical treatment, as described in the following chapter.

CHAPTER XIX

ELECTRICAL TREATMENT

LIKE massage, electricity applied with definite technique is an accessory measure of considerable value in the treatment of chronic constipation. Either the galvanic or the faradic current may be used, but in my opinion better results are obtained from the latter. The two currents can also be used in combination. In what follows we shall describe the essential points in the technique of application of the faradic current.

The simplest mode of application of the faradic current is the external (percutaneous). For this purpose we employ two large plate electrodes about four by five inches in size, one of which is placed on either side of the abdomen. Instead of these plate electrodes we may use roller, brush, or ball electrodes (see Fig-

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ures 12, 13, and 14). The position of the electrodes can be changed during the séance so that the current passes from above downward, from one side to the other, or obliquely through the abdomen. Or we can place one plate electrode just below the breast bone while the other, in the form of a roller electrode is passed



Courtesy of McIntosh Electrical Corporation, Chicago.

FIG. 12.—Roller Electrode made of Metal with cloth Cover and provided with a Handle.

along over the various intestinal segments. The faradic current should be strong enough to cause an evident contraction of the abdominal muscles. If the galvanic current is used it should not exceed 30 milliamperes in strength. A séance should last about ten minutes at the most.

As implied in our remarks in the previous chapter, massage may be given im-

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mediately after the conclusion of the faradization. But if the combination tires the patient too much the electrical treatment and massage may be given in alternation on successive days. The percutaneous faradic application is especially adapted to the treatment of simple uncomplicated constipation in patients with thin abdominal walls. As in the



Courtesy of McIntosh Electrical Corporation, Chicago.

FIG. 13.—Brush Electrode of oval shape and handy size with natural Bristles.

case of massage, the application of electricity is not advisable when there is any inflammatory process in the domain of the digestive apparatus or even in any of the neighboring organs.

The technique of faradization of the rectum differs from that described above. For this purpose we employ a so-called rectal electrode. The apparatus that I use for this purpose consists of a six-inch

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(15-cm.) long soft rectal tube within which is a platinum spiral (Figure 15). The upper end has, besides the arrangement for making contact with the faradic apparatus, a small in- and out-flow tube for filling the rectum with fluid. The rectum is filled with about an ounce and

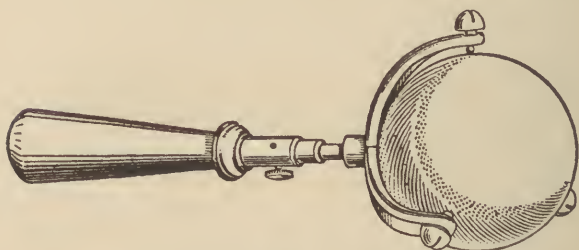


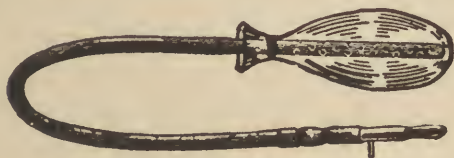
FIG. 14.—Massage Ball Electrode.

a half (50 c.c.) of lukewarm water or of a one per cent. saline solution, which is retained. The other electrode is passed over the abdomen along the course of the large intestine. In this application contractions of the abdominal wall are very evident. The patient will also feel a pronounced tho not painful prickling in the rectum. Here also, as in the case of the percutaneous application, the galvanic

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current can be used instead of the faradic in the strength of from 20 to 30 milliamperes. Opinion is divided as to the relative merits of these two currents. Personally I prefer the faradic. The duration of the séance should not exceed ten minutes.

Rectal faradization is especially



Courtesy of McIntosh Electrical Corporation, Chicago.

FIG. 15.—Rectal Electrode. This has flexible rubber catheter, with or without an olive point, and with a nickel stopcock, for irrigation.

adapted to the treatment of constipation when the stoppage is located in the lowest portion of the large intestine. We often obtain very marked assistance in the therapeutics of habitual constipation from this procedure, but it must not be employed when the trouble is complicated by catarrhal or other forms of inflammation, by hemorrhoids or ulcer of the rectum.

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The carrying out of the electrical treatment should be wholly in the hands of the physician, who must determine the time and strength of current to be used. Electrical treatment will do more harm than good if given by persons who are not sufficiently skilled in its application. But after a while, if the treatment is evidently doing good, the application of the electricity can safely be entrusted to the patient himself, if he is sufficiently intelligent to appreciate and follow the directions given. In my opinion herein lies one great advantage of electricity over massage, for when dependence is placed upon the latter the masseur soon becomes an inseparable companion for the rest of life. I have seen a number of patients who had become quite skilful in the self-administration of rectal faradization. Another advantage of the method is that the patient can carry the portable induction apparatus with him when traveling and so can make an electrical application whenever the necessity arises.

The electrical treatment of constipa-

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tion must be carried out for several weeks running, most profitably of course in conjunction with the constipation diet, and is of especial service when the latter acts insufficiently or not at all. Naturally we are not to expect miracles from this method in obstinate cases of inveterate constipation, with the seat of the stoppage deep in the intestine, but a methodical and persevering use of electricity will almost surely give good results in most cases.

CHAPTER XX

EXERCISE, HOME GYMNASTICS, AND SWEDISH MOVEMENTS

BODILY movements, from walking to regular exercises in swimming, rowing, riding, bicycling; gymnasium exercises, etc., play an important rôle not only in the matter of promoting health, but also in the way of improving the appetite and regulating the digestive functions. They belong, therefore, among the weightiest preventive measures, especially of the tendency to lazy digestion which manifests itself in early youth. They are serviceable, not only in the case of robust children, but also in that of those who are delicate and weakly tho otherwise organically sound. The bodily exercises must in these cases be properly proportioned and we should not urge the children to exercise and play to such an ex-

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tent that they are exhausted thereby. On strong children of good constitution we can naturally make greater demands.

It is much more difficult to induce men and women of middle age to undertake exercise cures. With such persons, especially those living in large cities, business and other undertakings make so many demands on their time that hardly any is left to devote to exercise. But even with patients of this age we should insist upon the great benefit to be derived from exercise altho it may be no more than walking in the open air. But much more beneficial than simple walking are other exercises in the open air, such as skating, skiing, tennis, golf, rowing, and the like. It is important that these exercises should not be reserved for occasional use on holidays, but should be practised regularly and if possible at a definite time each day. There are many people who console themselves with the thought that they will have a vacation of several weeks in the summer when they can make up for their sedentary life and lack of exercise.

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But experience teaches that the result of such cursory activity offers no satisfactory substitute for regular training of the muscles and the whole body. Every one in business, whether man or woman, should scrupulously reserve a certain time, if only half an hour each day, for bodily exercise.

Now the question whether or no the function of the large intestine is influenced to any great degree by systematic bodily exercise is not easy to answer. We saw above (Part I, Chapter I) that in the case of restless, nervous, excitable individuals exercises and athletics act very unfavorably upon the motility of the intestines, and that in such patients rest-cures and a full diet will often, other things being equal, exert a curative action, not only upon the irritable nervous system but also upon the chronic constipation that so often goes hand in hand with the neurotic state. But in general we can not often enough and forcibly enough counsel business men to send the automobile or the carriage back home, and

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make their way to and from their place of business by means of the locomotory apparatus which nature has given them.

When for any evident reason regular exercise in the open air is not practicable, the patient should be advised at least to practise light gymnastic exercises in his room. Of these knee bending is especially to be recommended. These exercises should be practised with the clothes off, morning and evening, for from ten to fifteen minutes. Elderly persons should not do them too rapidly, but deliberately, so as to avoid any strain on the heart. I am convinced that methodical knee bending exercises are of great service when the bowels are acting sluggishly. But even when there is a condition of fully developed constipation these procedures, regularly and perseveringly carried out, offer a powerful aid to the other therapeutic measures. A celebrated Swiss physician has stated in his work on psychotherapy, that with many men the mere bending over to tie their shoe-laces acts as a certain stimulus to

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bowel evacuation. I have heard the same statement made by quite a number of my own patients. We might conclude from this that it would be to the good of their digestion if our society ladies would relieve their maids of this duty and take it upon themselves.*

Real athletic sports, however favorable their action may be on the organism in general, are not so well adapted as is generally supposed to improve digestion and especially to tone up the weakened intestinal function. Thus it is a well known fact that not a few gentleman riders and jockeys have often to seek medical advice for the relief of pronounced constipation. But in this connection we must not forget that persons of this class are often given, through the necessities of their training, to the eating of large quantities of lean meat and the avoidance of fats. I recall the case of a professional bicyclist who suffered from the most obstinate constipation that I have ever encountered. But

* See also, in this connection, the remarks on the Postural Treatment of Williams, in Part III, Chapter 3.

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this apart, athletic sports, especially when indulged in to excess, are not in the class of measures recommended for the relief of constipation. Indeed it is a question, when called upon to treat professional athletes for this trouble, whether we could do better than to order the patient to take an absolute rest-cure of several weeks' duration, in bed it may be, or, combined with a suitable diet, in the hills or woods.

The Swedish Movement-cure. This is conducted partly by the hand, partly by means of specially constructed machines, and in special institutions established for the relief of diseases of the most varied character. For the restoration of the bowel function recourse is had to manual methods of bending the trunk backward and forward which cause a sort of vibratory pressure in the abdomen followed by rhythmical bearing-down sensations. Other parts of the method are the pounding and shaking machines of the Zander or Herz system, and also the shaking bicycle apparatus, the rowing and riding

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machines, and others. Whether these shaking machines do have an actual permanent influence on the weakened intestinal peristalsis may be left undecided. Their most permanent effect seems to me to be in cases of poorly developed or relaxed abdominal musculature. I would say, however, that the Swedish movement-cure, whether administered manually or by machinery, can most certainly have no permanently favorable action in advanced cases of constipation, when used by itself. Nevertheless it can be employed advantageously as an adjuvant to the above-described physical methods of treatment, increasing their effectiveness.

CHAPTER XXI

HYDROTHERAPY

HYDROTHERAPY does not enter into consideration in all cases of chronic constipation and indeed in most it can be dispensed with. It is only when this condition occurs in neurasthenics, or in general in individuals with a labile nervous system, that hydrotherapy can with advantage be resorted to as an adjuvant to other methods. In addition to hot and cold compresses, cold rubs, and cold packs, the half bath and the so called Scotch douche are valuable accessory measures. The half bath is given in the following way: the patient, with a cold wet cloth on his head and his chest wet with cold water, gets into the tub with water at about 26° C. (79° F.) and deep enough to cover the sitting patient about to his navel. Now he immerses himself,

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leaning back until his shoulders are in the water, and then resumes a sitting posture while the attendant pours water over his body from a small pail. After this affusion he assumes a half sitting, half reclining position while the attendant thoroughly wets his chest, abdomen, back, and extremities. Cold water is then added so as to reduce the temperature of the bath by 3 or 4 degrees F. The patient is douched with the colder water and is energetically rubbed. As the treatment progresses the temperature of the water at both the beginning and the end of the bath may be reduced.

In cases of very obstinate constipation the half bath can be combined with the high douche. The attendant dips water from the tub with the pail and then mounting on a stool pours the water from a height of from 3 to 5 feet upon the patient's abdomen. This combination of thermal and mechanical stimuli was called by Winternitz, the originator of modern scientific hydrotherapy, "thermal

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massage." The duration of the half bath should be not longer than 10 minutes.

The Scotch douche is applied by directing a full stream of rapidly alternating hot and cold water under high pressure upon the patient's abdomen. Such a stream of water of alternating high and low temperature directed with force against any part of the body acts as a powerful stimulus to the underlying organ, in this case to the lax abdominal musculature. Again, in the case of nervous individuals with sluggish action of the upper part of the large intestine, the systematic application of this douche of contrasting temperatures will exert a favorable influence upon the general nervous system as well as upon the local intestinal stasis.

In that form of constipation which is accompanied with pain and flatulence warm hydrotherapeutic measures are preferable to those just mentioned. These applications are made in the form of warm compresses which can be applied either at the beginning of the attack of

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colic, or nightly. A specially useful application of this kind is one devised by Winternitz, and is described as follows (see Figure 16): A coil of aluminum or rubber tubing through which water cir-



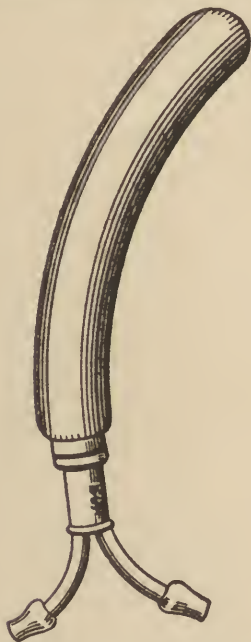
Courtesy of The Kny-Scheerer Corporation, New York.

FIG. 16.—Cooling Apparatus made of India rubber Tubing with two loose ends for inflow and outflow.

culates at a temperature of 50° to 60° C. (122° to 140° F.) is covered with several folds of gauze wrung out of warm water and enclosed in flannel. The compress can remain in place for one hour or longer and the application can be repeated daily for weeks at a time.

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When the intestinal stasis is located in the lower segment of the large intestine, or when there is inflammation associated



Courtesy of The Kny-Scheerer Corporation, New York.

FIG. 17.—Rectal Psychrophore, or Cooling Tube, of metal with inlet and outlet tubes.

with it, sometimes also when hemorrhoids are present, we can make use of a cooling apparatus, the so-called psychrophore

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(Figure 17), in the rectum, by means of which a continual stream of cold water flows in and out of the rectum. The

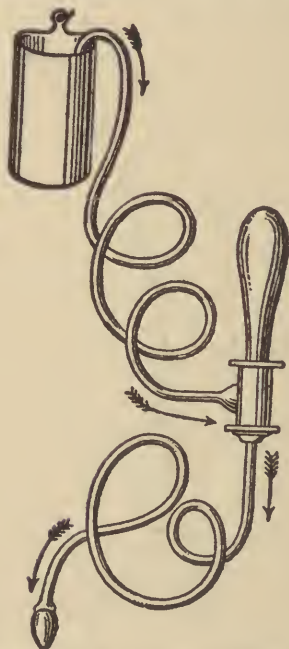


FIG. 18.—Atzberger's Rectal Psychrophore, or Cooler.

cooling apparatus can also be used in diseases of the prostate gland, which often offer an impediment to defecation in old men.

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One of the most simple forms of apparatus for this purpose is the Atzberger rectal cooler (Figure 18). This consists of a peg-shaped or olive-shaped hard rubber ball through which a continuous stream of cold water is passed. The application at too low a temperature is inadvisable as it may give rise to rectal cramps. The best initial temperature is 20°C . (68°F .), which can be gradually lowered to 10°C . (50°F .). The application is made for a period of ten minutes, but this can be extended to several hours if desired. When suppuration is threatening or an abscess is actually forming, the development of which we desire to accelerate, hot water can be used in place of cold. In other cases an alternation of hot and cold water may be indicated. The carrying out of the details of this method is the physician's duty, but in any case it can hardly be employed satisfactorily elsewhere than in a hospital or sanatorium having a good hydrotherapeutic installation.

When there are projecting or external

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hemorrhoids, which I have previously described, a small ice-bag or cold-water bag may be very serviceable. The latter can be constructed of a two-way catheter attached to a small thin rubber bag and connected by a rubber tube to a faucet through which a continual stream of cold water can be made to flow. The distended bag is applied to the inflamed part, and the effect of the cold is usually described by the patient as most comforting. The bag can be filled with cracked ice instead of running water, the catheter being removed and the opening closed with a string. I have found this equally grateful to the patient in many cases. The appliance can also be used with a flow of hot water instead of cold, with great relief to the pain in certain cases of inflammation of the rectum. All these applications, as well as those above described, are to be made only on the order and under the direction of the physician.

CHAPTER XXII

OPERATIVE TREATMENT

OPERATIVE treatment of habitual constipation can of course be thought of only when the trouble is associated with other serious morbid conditions. When functional disturbances of the large intestine alone are present any attempt at their operative relief is practically always superfluous, if not, indeed, dangerous. On the other hand, when the chronic intestinal stasis is accompanied by more or less severe abdominal pain or other disturbing symptoms referable to the intestinal canal, and internal treatment has failed to bring relief, the question must be considered whether we can not afford relief by operative measures. In most of these cases the pain or pressure symptoms will be located in the right lower portion of the abdomen. The suspicion then that

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the case is one of appendicitis is very strong, and if there is a history of a longer or shorter period of acute illness, accompanied by fever, the suspicion becomes a practical certainty. But, as we have before remarked, we meet, not infrequently, with patients whose intestinal pain continues after removal of the appendix or in whom a new, and no less unpleasant pain reappears in the same location. But the experienced and cautious physician will not forget that pain of this kind and in this location may be due to disease of the gall-bladder or kidney, to mention only these two.

Now what is to be done in such cases? Medical science, despite its great advances, has not yet reached the point of being able to differentiate sharply and certainly in all cases between diseases of the appendix and those of the cecum. Doubtless both these parts can be affected at the same time, but so long as the appendix exists as a trouble breeder we shall find a cure of disease of the cecum difficult to bring about. If we burden the

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cecum with too heavy food we must always expect that the appendix as a neighboring organ will become sympathetically more or less seriously involved. But if we put the patient on a very spare diet and send him to bed there may again be stagnation in the cecum. In this painful dilemma the removal of the appendix should be strongly advised. We need not conceal from intelligent patients the uncertainty in which we find ourselves, for they know that medicine is not mathematics.

When the appendix is removed, and this operation is to-day practically unattended with danger, we gain immediately a clearer idea of the cause of the pain; for if it continues we know, at least, that the appendix was not alone implicated. But this opens out a more definite plan of treatment as well, for now we need not be in such fear of the cecum. The patient can move about as he likes in spite of his pain, and even as regards diet we need not be so anxious, regarding either the quality or the quantity, as we were before.

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We will not again enter into the details of the diet for we have already said all that is necessary on that point in Chapter VII.

But there are other reasons why we find ourselves obliged to advocate the removal of the appendix in cases of pain of uncertain origin in the right inferior portion of the abdomen. Those are the cases in which the patient and the members of his family are in great fear of an attack of acute appendicitis threatening life. This apprehension is often so extreme that the patient falls into a condition of neurasthenic fear, hardly dares take a step in the street, and avoids walking and all other movements. In short he develops a sort of "appendicophobia" with the most gloomy forebodings. In such a case the physician should not keep the patient under observation too long, but should advise that an operation be performed as soon as possible.

In women it is especially the internal generative organs that are frequently involved in inflammation of the appendix.

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In these cases also constipation is a frequent complication that may produce uncertainty as to the actual cause of the pain. In such cases if we can not establish a definite diagnosis, it will be better to remove the appendix rather than remain in suspense.

The presence of adhesions between various segments of the intestine offers another indication for operative intervention. This is the more imperative when the adhesions themselves impede the downward movement of the intestinal contents, as when they occur at the angle between the transverse and descending portions of the colon. At the present day we can determine the presence of such adhesions in many cases by means of a careful Roentgen examination, but even with this one may make mistakes. In every case it is very difficult to decide whether the adhesions are the cause of the intestinal stasis or just an indifferent occurrence, and so one can not lightly decide for or against an operation. But the fact remains that when pain and other

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severe symptoms are present and our efforts to relieve them by non-operative measures have come to naught, there is no other resort than to surgery.

These are the usual conditions under which the necessity of a surgical operation may declare itself. There are yet other mechanical impediments to peristalsis, but it would lead us too far to enter upon a discussion of all possible emergencies. It goes without saying that a decision as to whether or no surgical intervention is demanded for the relief of the complications in a given case of constipation, can be formed only after a long and careful observation in a hospital. There, too, we are in the best position to determine how far we can hope for relief by non-operative measures. These questions must be settled by a consultation and discussion between both physician and surgeon.

CHAPTER XXIII

TWELVE GOLDEN RULES

1. Accustom yourself to go to the toilet every day in the early morning.

2. Do not protract your visit to the toilet beyond ten minutes; a longer stay is a sign that your bowels are not in good order.

3. Eat your meals at as near the same hour every day as possible, and eat them slowly. If you are irregular in taking your nourishment your bowels also will be irregular.

4. Imitate the countryman in your choice of diet. Avoid large quantities of meat, fine confections, and puddings. Let your diet consist chiefly of rye or whole wheat bread, fats, fruit, vegetables, and salads.

5. Spend at least a half hour or a whole hour every day, in fair weather or foul, in open-air exercise.

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6. Do not allow yourself or your children to fall into the laxative habit. The longer the abuse of cathartics has continued, the more difficult will be the cure of the constipation.

7. When you are forced to take a cathartic, select the simplest and the least harmful.

8. Reject all laxatives the composition of which is unknown or which are secret remedies. In doubtful cases consult your physician.

9. Listen, if you must, to the recommendations by friends and acquaintances of infallibly effective laxatives, but don't act on their advice.

10. If you take an enema don't distend the rectum with too much fluid. Avoid too cold or too hot injections. Add no irritating substances to the injection fluid.

11. Follow the constipation diet exactly in every detail. Even should it work unsatisfactorily or not at all, you will have gained the advantage that mild laxatives, formerly ineffectual, will now work well.

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12. Do not abandon the diet too abruptly. Give it up very gradually and tentatively. When the constipation has lasted for years keep the principles of the constipation diet in mind for all time.

PART III

TREATMENT OF THE RESULTS OF CONSTIPATION

CHAPTER I

TREATMENT OF HEMORRHOIDS

HEMORRHOIDS, as we have seen, are not a necessary or even indeed a frequent complication of habitual constipation. We have also learned that we must carefully distinguish between external hemorrhoids lying beneath the skin at the anus, and internal hemorrhoids. The treatment of the first variety is very simple. Since the disease consists solely of local swelling and enlargement of the dilated veins and since its chief symptom is a more or less severe pain on sitting and walking, all that is necessary to secure relief is rest in bed for a few days together with the local application of cold compresses, or, better, a small ice bag. Under this treatment the swelling goes down day by day, so that by the end of a week at most it will have disappeared, leaving

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only a small negligible elevation which also disappears in the course of time. As these external piles, as we have seen, never bleed or suppurate, an operation, which is occasionally advised by physicians, is, according to my experience at least, unnecessary.

The treatment of internal piles is more difficult. Here we have three tasks to perform; namely, (1) the arrest of the bleeding, (2) the treatment of the prolapse, and (3) the cure of the inflammation.

But before we enter upon a discussion of these therapeutic undertakings we must speak briefly of the prevention of hemorrhoids. Treatment should not be delayed until the disease is fully developed. Herein lies, as I have often observed, an error that patients very frequently commit. We should endeavor to arrest the progress of the disease by preventive measures instituted at its very commencement, and as chronic constipation, especially when the stasis is deeply seated, is a frequent cause of hemor-

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rhoids, we can best prevent the latter by dietetic measures. An important prophylactic caution to those who are beginning to suffer from piles is to avoid all strong alcoholic liquors and heavy wines, as well as spices, pickles, mustard, pepper, and piquant English sauces, and this advice should be especially urgent if there already has been any bleeding. Patients with beginning hemorrhoids must take plenty of exercise. Sports of all kinds, provided they are not carried to excess, and also cold bathing, swimming, and rowing are good for persons with a tendency to piles, for we know that the development of hemorrhoids is favored by sedentary occupations.

If a regulation of intestinal activities has not been secured by dietetic measures, or if the patient lacks the ability or energy to carry them out, we must resort to the use of one of the mild laxatives previously enumerated. Among these licorice powder has won a special place as a specific remedy and as the consoler of sufferers from hemorrhoids. It can

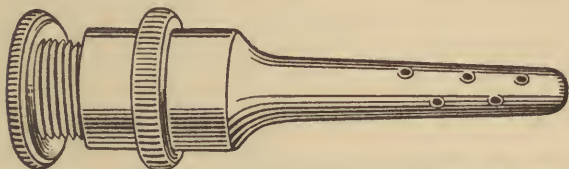
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hardly be admitted that it has any curative influence upon the hemorrhoids, yet there are many persons who laud this harmless preparation as possessing healing virtues. Of equal rank are the magnesia and cascara sagrada preparations. Drastic cathartics, on the other hand, have long had the reputation of favoring the production of piles and of causing hemorrhage. Altho this reputation can not be regarded as well earned, it is my belief, however, that these remedies should be avoided as far as possible in cases of incipient hemorrhoids. A visit is often made to some mineral spring by those in the early stages of hemorrhoids and they loudly praise the curative effects of the waters. But I do not think the waters are to be credited with the favorable result so much as the regular mode of living, the simple diet, the avoidance of alcoholic excess, the abundant exercise, and, last but not least, the use of the mineral water baths.

When the stasis is located in the lowest portion of the large intestine or actually

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in the rectum, retained enemas of olive-oil, sesame-oil, cod-liver oil and soda emulsion, and liquid paraffin are the best synergistic measures, as previously described. On the other hand, glycerin in the form of microclysters or suppositories or added to other enema fluids, is not to be recommended when there is any bleed-



Courtesy of The Kny-Scheerer Corporation, New York.
FIG. 19.—Rectal Ointment Applicator.

ing or an evident tendency to the same. Small oil enemas (3 to 5 teaspoonfuls) may be useful also when the hemorrhoids are painful. I would especially recommend in such cases small injections of sweet almond-oil. Considerable relief can also be obtained by the use of pain-stilling suppositories having belladonna as the main ingredient. Similarly, injections of various soothing ointments by means of the ointment syringe (Figure

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19) will be very grateful in cases of inflamed piles. Stronger remedies should be used only when prescribed by a physician.

One must on no account omit the toilet of the anus in all cases of hemorrhoids. When it can be arranged there should be attached to the water closet an appliance for projecting an upward stream of water (the hemorrhoidal douche) which is a way as simple as it is tidy of toning up the muscles of the anus and also of arresting any incipient bleeding. But the same result can be obtained by the careful cleansing of the anus and parts about with a 30 per cent. solution of peroxid of hydrogen or one of peroxid of barium of the same strength. Even better is the advice given by many physicians to follow the evacuation with a small enema of from 3 to 6 ounces of water in order to wash away any fecal particles adhering to the folds of the rectal mucous membrane. These enemas should be continued for a long time, many months at least. Instead of plain water we can use

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with good effect an enema of a 3 per cent. solution of peroxid of hydrogen, which possesses the great advantage that besides cleansing the bowel it promotes the healing of any small ulcers that may be in the wall of the intestine.

If the trouble is far advanced the control of the bleeding will occupy an important place in the treatment. Even if the hemorrhages have already become moderately profuse, or even tho not profuse are repeated frequently, we can at first try palliative measures. The number of these is very considerable and every physician usually has his favorite method. Most of these are known to me and some of them I prize as very effective. From a few of them I have seen effects that have lasted for years, but they are never really permanent. The bleeding returns finally with great violence and then the best of these measures are shown to be worthless. It sometimes happens, however, that the hemorrhages cease spontaneously, as indeed the whole trouble may.

The remedies for arresting the hemor-

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rhages are applied in the form of either rectal injections or suppositories. The witch-hazel preparations, so popular in America, are very serviceable, and the drug can be given internally as well as applied locally. But my own experience leads me to doubt whether the effect obtained by these preparations is more than temporary. In any case the patients who suffer from profuse hemorrhages must not run after quack medicines and try all sorts of worthless so-called hemostatics until they have fallen into a condition of extreme weakness and anemia. If the bleeding is not controlled within a few days by the measures employed, the physician should not hesitate to advise that an end be put to the hemorrhages by removal of the piles.

The second symptom that calls for medical intervention is the prolapse of the hemorrhoidal nodules, as well as the combination of prolapsed and bleeding hemorrhoids. It must be obvious to any intelligent person that anything so mechanical as a protrusion of the hemor-

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rhoidal nodules can never be removed by treatment with salves or suppositories. The attempt has been made to prevent the prolapse of the nodules by all sorts of instruments, usually hard rubber pessaries, passed into the rectum, but my experience has been that after a short period of use these appliances will be found in the patient's bureau drawer. The only rational method of preventing a protrusion of the piles is their removal.

What must we do when the protruding nodules become incarcerated? The treatment of this accident with scarcely an exception falls within the province of the physician. But, of course, the patient confronted with this trouble will try at once to replace the protruding piles. Often, however, this attempt fails and the patient is thrown into a condition of pain and apprehension. Opinions of physicians and surgeons as to what is best to be done in a case of strangulated piles are not unanimous. It is not my province in this work to decide between conflicting opinions, but I would urgently warn

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against any forcible attempts to return the hemorrhoids into the bowel. I have found indeed that these hemorrhoidal nodules, if left alone, will in a short time shrivel up and fall off; but I would not conceal the fact that this spontaneous cure may be accompanied by very severe pain, which can, however, be overcome or at least made endurable by narcotics. The cure obtained in this way may often be permanent, nevertheless in some cases it may later be necessary to remove the piles by surgical measures in order to obviate a return of the trouble.

The treatment of inflamed or ulcerated hemorrhoids is very frequently undertaken by the patient himself, who makes use of various salves, suppositories, and irrigations, and it can not be denied that many of these attempts at relief are successful. Anusol and other proprietary remedies enjoy a great reputation in Germany, and ointment and suppositories of witch-hazel are also warmly praised by some who have tried them.

As for the technique of the radical re-

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moval of hemorrhoids we must content ourselves with a brief description. The most frequent method employed to-day is the operative. This consists either in cauterization with a suitable instrument, or in removal of the nodules by the knife. Both of these methods have now been brought to a high degree of efficiency. But in addition to these there are two other methods, namely, ligation of the nodules, and the injection into them of blood-coagulating substances. The treatment by the injection of more or less concentrated solutions of carbolic acid has been in use for more than forty years. It was first proposed and employed in America and later was used also by European surgeons. Various other substances have also been used for the same purpose. Of recent years I have given the preference to alcohol over all other substances as an injection material. In all these injection methods a skilful technique and a painstaking attention to details are very important in determining success or failure in the result. When

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these details are carefully and conscientiously observed, my experience has convinced me that the injection method is in no way inferior to the use of the knife, in inveterate cases as well as in the recent and mild ones. The use of the ligature for the removal of the hemorrhoidal nodules, when skilfully executed, is very warmly advocated by many.

A mode of treatment much employed in England and France is that by the high-frequency current (d'Arsonvalization). In this method the high-frequency current is applied by means of a rod-shaped glass electrode within which is a unipolar copper wire. The daily séance lasts for from three to five minutes and is repeated eight or ten times. By these applications the distressing itching is relieved and the hemorrhoidal bleeding is also arrested, but we can not look for a permanent destruction of the hemorrhoidal nodules, and for this reason d'Arsonvalization has hitherto failed of general adoption.

The attempt has recently been made in

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Germany to cure hemorrhoids by means of radium or mesothorium. The application is made by a rod-shaped brass container with walls about one-eighth inch (2 mm.) thick, and over this to prevent the secondary action of the rays, is stretched a rubber ring. The exposure should last about two hours and should be made every other day. The hemorrhoidal nodules are almost always reduced in size by this treatment, and in most cases, indeed, are entirely removed. The subjective symptoms are in all cases favorably influenced. If there are any evil effects the writer has not encountered them, but the method is still too recent to permit of a final judgment as to its results and it will be well to await further reports before giving a definite opinion as to its efficacy.

Altho I have spoken repeatedly of the radical removal of hemorrhoids this expression is not altogether correct. By the methods described, both operative and non-operative, the hemorrhoidal nodules can indeed be removed, but not necessa-

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rily the hemorrhoidal disease. It must be admitted that in not a few cases the worst symptoms of the trouble are definitely removed by the means mentioned, yet in many other cases relapses occur sooner or later which call for a repetition of the treatment. None of the methods offers a guarantee that relapses will not occur, and we can readily understand this when we remember how much constipation has to do with the development of piles. When this continues after the removal of the hemorrhoids or if it returns through neglect of diet, we can not be surprised if the hemorrhoidal nodules develop anew. If we wish to avoid a relapse we must push the rational treatment of constipation with still greater energy after removal of the piles, and we should also observe scrupulously all the above described measures of prevention.

CHAPTER II

FISSURE OF THE ANUS

ANAL fissure, as we saw in Part I of this treatise, is a frequent complication of habitual constipation. It is the most painful rectal disease that we know of, and therefore not only its early diagnosis, but also its earliest possible treatment is of extreme importance. The treatment of this condition, as in the case of hemorrhoids, may be operative or non-operative. The former consists in stretching the sphincter or closing muscle of the anus and cauterizing the wound, both these procedures being done preferably under general anesthesia, tho occasionally local anesthesia may be employed. This method is always successful and is far and away ahead of any other treatment in advanced and long standing cases of fissure. In most recent cases, however,

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we can obtain a cure by medical treatment in eight or ten days. There are many remedies applicable to this purpose which act more or less well.

The patient with this painful disorder should avoid experimenting with any sort of advertised salve or quack remedy and should seek at once the advice of a physician experienced in the management of these diseases. It is urgently necessary when a fissure occurs to see to it that the stools are liquid, and here one can not rely upon dietetic measures alone, but must take some dependable laxative, preferably one that will not act more than once a day. Only after the cure of the fissure should we try to cure the still persisting constipation by the dietetic measures above described.

CHAPTER III

PROLAPSE OF THE RECTUM

IN incipient cases of prolapse of the rectum the patient should push the bowel back immediately after defecation, if it does not return spontaneously. The stools must be of a mushy consistence, and as that can be effected by dietetic measures, it will be better to resort to the constipation diet rather than to drugs. But if drugs are for any reason preferred, the selection should be made from the list of mild laxatives given in Part II, Chapter XV. The same result may be obtained by suitable enemas, but difficulty is sometimes experienced here from the fact that the sphincter muscle of the anus is apt to be relaxed and unable to retain even small quantities of fluid. In such cases one must try the effect of very small clysters (6 to 8 or 10 teaspoonfuls of oil or liquid paraf-

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fin) given at night. Confinement to bed or the sofa for several weeks is very efficacious, since the danger of a prolapse is much less when the patient is in a horizontal position than when he is moving about.

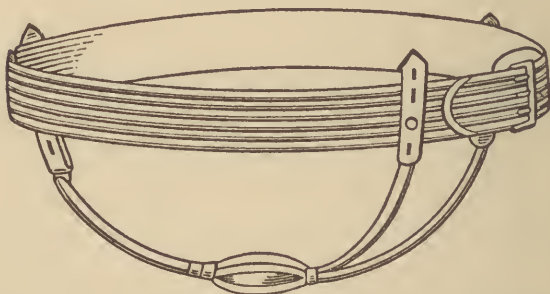


FIG. 20.—Esmarch's Rectal Supporter, to prevent Prolapse.

This perhaps may be the place to mention the postural treatment of constipation which was recommended by Williams a long while ago. It consists simply in defecating in the squatting position by which the emptying of the rectal contents is greatly facilitated. But whatever the position, all straining at stool is to be most carefully avoided in cases of incipient prolapse of the rectum.

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For the palliative treatment of prolapse the so-called rectal supporters are most useful. (See Figure 20.) A sitz bath immediately after defecation with the addition to the water of a decoction of oak bark goes far to relieve the discomfort caused by the catarrhal inflammation and mucous discharge so often complicating prolapse of the rectum.

CHAPTER IV

FLATULENCE

WE have spoken in various parts of this book of flatulence as a symptom or sequel of habitual constipation. But before entering upon the treatment of this most annoying symptom, we would preface its discussion with a few brief remarks regarding the nature and origin of flatulence. The presence of abnormal quantities of gas in the stomach and intestinal canal may be due to any one of various causes. It may, for example, be the result of the swallowing of air while eating, a condition called by physicians aerophagy, and occurring especially when one eats too fast. Often the patients themselves are unaware of how rapidly they eat and learn of it first from the criticism of their associates. In this way the patients pump their intestines, so to speak,

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full of air, and then feel "stuffed" after every meal and get relief only as the air escapes in one or the other direction.

The manner of this relief is very important. It occurs in a series of explosions. The air is expelled from the stomach or rectum with a loud noise for minutes at a time, and it is of considerable importance, in a causal diagnostic sense, to note that what escapes from the anus is almost or entirely odorless. If we can rely upon the patient's positive assertion that this is the case, then we can confidently regard the flatulence as due to aerophagy or air-swallowing. I have observed this form of flatulence very often among Americans who, of all civilized folk, are first among the rapid eaters.

When once the cause of this condition is recognized the plan of treatment is as good as already mapped out. The patients must take the trouble to eat slowly and to masticate their food well, thoroughly mixing it with saliva before swallowing. That is, however, in the case of habitual rapid eaters easier said than

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done. When there is great difficulty in getting a patient to eat slowly, he should be advised to take small but more frequent meals. If this rule is followed the patients at least do not come to the table with a ravenous appetite. It is also well to caution these patients not to drink large quantities of fluid with their meals, for experience has shown that the act of drinking favors the swallowing of air. When flatulence occurs with chronic constipation, as it so often does, the diet governed by the previously formulated rules may be continued without fear.

The case is different in the form of flatulence which has developed as a result of habitual constipation. Here we have not to do with swallowed air but with the gaseous products of decomposition of albumin or putrefying material. In this form the gas expelled from the rectum has a more or less offensive odor. The formation of gas may here be due to the fact that the fecal mass, or at least a part of it, is held too long in the large intestine and is there partially converted

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into gaseous products through the action of bacteria. It is especially the cellulose which, when too long retained in the intestine in these cases of stasis, gives occasion to profuse gas formation. The gases consist chiefly of hydrogen, carbureted hydrogen, and sulphureted hydrogen. It goes without saying that this gaseous decomposition is markedly increased by the ingestion of the so-called flatulent or bloating substances, such as cabbage, beans, peas, lentils, and radishes.

An abnormal gas production can occur under three different conditions: (1) Retarded peristalsis of the large intestine; (2) stasis in the large intestine due to contractions of the intestinal wall (spastic or spasmogenic constipation); (3) diminished reabsorption of the intestinal gases. When, for example, the mucous membrane of the large intestine becomes sympathetically affected from any cause, the reabsorption of the gases is prevented, with the result that single segments of the large intestine become greatly distended.

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We can not here enter into a discussion of the diagnostic methods for determining which of these causal factors is present in the individual case. It is interesting to note that this abnormal gaseous decomposition may take place not only in those who are actually constipated, but also in individuals who affirm positively that their intestinal functions are performed in a perfectly normal manner. These statements, however, can not always be credited. When we take the trouble to make a Roentgen examination of patients of this sort in order to observe the rate of passage of the fecal material through the large intestine, we may often be astonished to find, despite the patient's statement, that the barium or bismuth mush remains much longer in the several bowel segments than it should normally; and we can confirm this finding by the results of other functional tests.

Another test consists in giving to the patient, with alleged normal intestinal motility, a reliable laxative for several days and then suspending its administration. If

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we find that the flatulence is noticeably less or disappears entirely during the period of taking the laxative, we can be certain that we have to do with a form of masked constipation. The treatment must here be based upon the principles described in Part II of this work. In any case it will be well to cut out from the diet all substances known to promote gas formation. In addition to the dietary regimen we can employ massage, electricity, hydrotherapy, and gymnastics as adjuvants in the treatment. In very pronounced cases of flatulence we may have to consider the advisability of sanatorium or hospital treatment if we can not gain mastery over the trouble by home management.

The treatment becomes a matter of great difficulty in those cases in which the cause is shown to reside neither in air swallowing nor in gaseous fermentation of the intestinal contents, and in which, therefore, the supposition that there is diminished reabsorption of the intestinal gases becomes probable. In the estima-

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tion of this causal factor the statements of the patient will carry much weight. Some accuse one factor, others another, and the physician will do well not to reject their statements offhand, but to test them as carefully as possible by painstaking investigation. In some cases the patients' theories will be proved to be right; in others the patients themselves will often be convinced by the results of the examination that they were in error. In any event it is certain that there are cases of flatulence in the management of which we must be satisfied to treat the symptom itself and seek in this way to give the patient some relief.

There are many methods and medications that we can employ for this purpose which, even if limited in their efficacy, will at least give some measure of relief to the sufferer. And first among these palliatives is the application of heat by means of a hot-water bag, warm compresses, or the now universally employed electric pad, which will exert a quieting influence on the abnormal intestinal move-

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ments, and so facilitate the expulsion of gas. Equally efficacious are the various teas which have, from olden times, had the reputation of reducing gaseous distention of the intestines. Such are infusions of valerian, fennel, peppermint, caraway, centaury, and various combinations of these teas with laxatives. Whether these various infusions have any value in themselves may be doubted, and I believe their main antispasmodic virtue resides in the warmth. For this reason I am accustomed to employ, with satisfactory palliative results, small hot enemas of camomile, peppermint, or valerian tea, to which I sometimes add an antispasmodic drug, such as belladonna. These I have called internal warm cataplasms.

Instead of using the various substances above mentioned in the form of infusions we can give the volatile oils derived from them. These are administered in drop doses, and many physicians, as well as patients, ascribe to them a restraining influence on the production of gas or a favorable influence on its expulsion.

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Of other remedies that may be regarded as also in the household class we may mention charcoal, especially animal charcoal, tho wood charcoal is also much in use. Both can be obtained under various names in tablet form. Another popular remedy for flatulence in Germany is the so-called magnesia perhydrol tablet, from which peroxid of hydrogen is formed, which soon breaks down into water and oxygen. This preparation has a mildly laxative action and is also somewhat disinfectant by reason of the peroxid of hydrogen which it forms. My own experience with it leads me to regard it as harmless and effective in the lighter forms of flatulence. In addition to the remedies above mentioned there are numerous others described by various physicians that are used with more or less success.

Besides the strictly medicinal measures, some of the physiotherapeutic procedures above described will often afford considerable help. In the treatment of flatulence the sufferer must have patience.

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Even the most experienced physician is not always able to determine immediately and with certainty the causal factors of the abnormal gas production, and the patient may have to be kept under observation for an indefinite period. The firmer the foundation on which the physician stands as to the causes of the gas production, and the more the patient helps him by his own efforts, the more certain will be the success of the treatment.





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